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Issue 122

Digital SLR Photography



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MASTER LENSES

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pages of expert
step-by-step skills

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readers the very best for 2017!

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Welcome



WELCOME TO THE JANUARY 2017 issue of *Digital SLR Photography*. With this time of year being the most popular time to add to your stockpile of photo kit, I wonder how many of you included a lens or two on your Christmas list this year? Hopefully quite a few of you have. While many opt to replace their camera, I've always preferred to spend my hard-earned on increasing and improving my arsenal of lenses. I was always of the view that there was no point changing a perfectly capable camera for another that offers slightly better resolution and/or a few extra features, when instead I could invest in filling holes in my outfit with a new lens like an ultra-wide or a dedicated macro lens. I always believed that adding lenses to my bag of tricks opened up fresh creative opportunities that could only serve to improve my photography. Whether it's a cheap and cheerful 50mm f/1.8 lens or an expensive fast telezoom, adding a new optic is a great way of invigorating your photography. In our *Beginner's Guide*, we cover all the essentials you need to know about which lens is best for you. We hope you enjoy this issue and, on behalf of everyone at *Digital SLR Photography*, may I wish you all a Merry Christmas and Happy New Year. All the best!

Daniel Lezano **Editor**



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ON THIS MONTH'S COVER...

The Lake District is one of the UK's favourite regions with landscape photographers. As demonstrated by this simple but beautiful composition, taken at Ashness in Derwent Water by regular contributor Ross Hoddinott. On p38, Ross provides expert advice on how you can capture similar results.



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With over 30 years' experience as an enthusiast SLR photographer and 20 years on photo magazines, editor Lezano is as passionate as ever about photography, in particular portraits.



Caroline Schmidt

With extensive experience as a magazine journalist, contributing editor Caroline is passionate about photography and delivering an inspiring magazine each month.



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Portfolio

One Ring To Rule Them All

by Raed Ammari

500px.com/ethos79

"Inspired by J.R.R. Tolkien's *Lord Of The Rings*. This is a friendly homeless man named Kent that I've photographed before. It was taken on a windy day in a busy street in Denver, Colorado. The challenge was to find a dark background and eliminate distractions from curious pedestrians. Kent's majestic hair and beard blowing in the wind add the right mood."

Sony Alpha A7R II with Sony Vario-Tessar T* FE 16-35mm f/4 ZA OSS lens.
Exposure: 1/800sec at f/5 (ISO 640).



The Lighthouse by Daniel Fleischhacker

www.daniel-photography.eu

(Above) "Fanad Head is in the north of Donegal in Ireland. This was taken on a windy evening – the clouds were moving fast and the waves were pounding the rocks. I wanted to include the rocks as a lead-in line to the lighthouse. I had to stabilise my tripod because of the strong wind and I used a ten-stop ND to capture movement in the clouds."

Nikon D810 with Tamron 15-30mm f/2.8 lens. Exposure: 30 seconds at f/11 (ISO 64).

The Burning Window by Daniel Fleischhacker

(Centre left) "A winter morning in Canyonlands National Park, Utah. On this morning I had really unique conditions – there was fog in the valley, a fresh dusting of snow, and fire in the sky. I composed the image to use the arch as a frame around the canyon and the mountains in the background. I used a polariser to control the glare of the snow and rocks."

Nikon D810 with Tamron 15-30mm f/2.8 lens. Exposure: Three seconds at f/11 (ISO 64).

The Glowing Hedges by Daniel Fleischhacker

(Bottom left) "I took this shot at the famous Dark Hedges in Northern Ireland. This place is really popular, and also a filming location for *Game of Thrones*. It was a sunny morning, with some soft light hitting the end of the road, which made a really nice point focus on. The trees are really magical. I used a polariser to enhance the autumn colours."

Nikon D810 with AF-S 70-200mm f/4G lens. Exposure: 1/6 sec at f/11 (ISO 64).

Colours of Norway by Daniel Fleischhacker

(Right) "Captured on the wonderful Lofoten Islands, during a cold, stormy morning. Strong winds blew across the landscape, creating cool cloud formations and there was still a lot of snow in the mountains, which contrasts with the landscape. I hiked up a small mountain to reach this lovely creek, which I used as a lead-in line."

Nikon D610 with AF-S 16-35mm f/4G lens. Exposure: 0.6 seconds at f/11 (ISO 100).







Freckles by Jovana Rikalo

jovanarikalo.com

(Top) "This girl, Helena, is one of my muses. She has captivating eyes, beautiful freckles, and incredible hair colour. This was taken during a very cold day during winter. During the shoot, I wanted contrast between the warm, vibrant colours and the bitter chill in the air."

Canon EOS 5D Mk III with Canon EF 135mm f/2L USM lens. Exposure: 1/800sec at f/2 (ISO 100).

Girl Fish by Jovana Rikalo

(Above left) "There isn't actually any specific story behind this image. I was photographing Milica during the summer – it was a very warm day so the water was refreshing! I added the fish during processing, and chose this species because its colour matched Milica's lipstick and eyes. I love playing with powerful colours in my images."

Canon EOS 5D Mk III with Sigma 35mm f/1.4 Art lens. Exposure: 1/125sec at f/5 (ISO 500).



Tornado by Jovana Rikalo

(Above right) "I love making fine-art images – images that tell stories. One of my biggest fears is tornados. The girl appears to be standing without fear, carefree and waiting for the tornado to pass by. However, how she feels on the inside is unclear. I chose not to show her face so as to hide the fear she keeps to herself for the passing storm."

Canon EOS 5D Mk III with EF 135mm f/2L lens. Exposure: 1/125sec at f/5 (ISO 500).

Red by Jovana Rikalo

(Right) "Colour play is heavily involved in this portrait too. I love the colour red – it screams for attention in images! My model Bojana has pale skin, so I ordered this bright and beautiful dress with a three metre long train to envelope her in. The dress contrasts with her skin and, when shot from above, forms a natural frame for the portrait."

Canon EOS 5D Mk III with EF 50mm f/1.4 USM lens. Exposure: 1/2000sec at f/2.5 (ISO 160).

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The Plain of Bagan by Saravut Whanset

500px.com/saravutwhanset

(Left) "I took this shot from an elevated pagoda overlooking the ancient city of Bagan. The pagoda was incredibly narrow, so I didn't have enough room to use my tripod. I exposed for the highlights, knowing that I could recover shadow detail during post-processing, if needed."
Nikon D800 with AF-S 70-200mm f/2.8G ED VR lens. Exposure: 1/200sec at f/6.3 (ISO 100).

Full by Saravut Whanset

(Below far left) "One of my favourite images. I asked the fisherman to cast his net down in front of my camera to create the splashes of water. I was sure to switch my camera to continuous high speed burst mode to ensure that I captured a frame that I was happy with."
Nikon D610 with AF-S 14-24mm f/2.8G lens. Exposure: 1/200sec at f/3.2 (ISO 640).

Farmer by Saravut Whanset

(Below centre left) "I like capturing images that tell a story. This was taken in my hometown in Thailand – a traditional farmer is carrying a rice paddy across a small bridge. The smoke in the atmosphere simplifies the composition and removes distractions from the background."
Nikon D4 with AF-S 70-200mm f/2.8G ED VR lens. Exposure: 1/6400sec at f/3.2 (ISO 160).

Go Home by Saravut Whanset

(Below centre right) "I shot this image in Mu Chang Chai, in northern Vietnam. It's a beautiful place and when the light is nice the terraced rice fields look incredible. I've visited Mu Chang Chai for the past three years and it's a beautiful place that never fails to impress."
Nikon D610 with AF-S 24-70mm f/2.8G ED lens. Exposure: 1/125sec at f/8 (ISO 250).

Go to Euro by Saravut Whanset

(Below right) "Two children playing football in the shallow water before sunset, maybe with dreams of being professionals one day? I shot from a low down angle with a telephoto lens at a wide aperture to emphasis the foreground bokeh and create a more interesting image."
Nikon D4 with AF 80-200mm f/2.8D lens. Exposure: 1/2500sec at f/3.5 (ISO 125).

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Snapshots

YOUR MONTHLY PHOTO DIGEST





AWARD
RESULTS

Take a walk on the **WILD SIDE**

THE GREATEST WILDLIFE IMAGES ARE HONOURED AS THE WINNERS OF THE NATURAL HISTORY MUSEUM'S WILDLIFE PHOTOGRAPHER OF THE YEAR AWARD 2016 ARE SHOWCASED IN LONDON

WINNER URBAN: *The Alley Cat* by Nayan Khanolkar: At night, in the Aarey Milk Colony in a suburb of Mumbai, bordering Sanjay Gandhi National Park, leopards slip ghost-like through the maze of alleys, looking for food (especially stray dogs). The Warli people living in the area respect the big cats. Despite encounters and occasional attacks, they are an accepted part of their lives and culture, seen in traditional paintings that decorate the walls of their homes. The leopard is not only the most versatile big cat but possibly the most persecuted.

© NAYAN KHANOLKAR / WILDLIFE PHOTOGRAPHER OF THE YEAR



© TIM LAMAN / WILDLIFE PHOTOGRAPHER OF THE YEAR

THE NATIONAL HISTORY MUSEUM in London is an iconic establishment that needs no introduction. As if the fascinating displays and exhibits available year round weren't enough of a reason to pay a visit, then here's another great excuse – from now until 10 September 2017 you can feast your eyes on the world's finest wildlife photography, as the winning images from the Wildlife Photographer of the Year 2016 go on display inside the museum.

The 52nd Wildlife Photographer of the Year award, developed and produced by the Natural History Museum, London, saw an influx of submissions, with almost 50,000 entries from 95 different countries all vying for the top prize. American photographer Tim Laman was crowned Wildlife Photographer of the Year 2016 for his striking image, *Entwined Lives* (above). Tim captured the image by rigging several GoPro cameras high up in a tree above the Indonesian rainforest, which he then triggered remotely as the orangutan climbed. It just goes to show that you don't need the biggest and best equipment to capture an award-winning photograph!

The Young Wildlife Photographer of the Year was named as 16-year-old Gideon Knight for his image *The Moon and the Crow* (p21), captured in London's Valentines Park. Gideon and Tim were amongst 16 category winners recognised by the panel of judges.

Depending on when you're picking this up, there might just be time to enter next year's award, which closes on 15 December 2016. To visit the exhibition you should book in advance – tickets start at £10.50 for adults (£6.50 for children). NHM members and children under four go free! For more info, visit: www.nhm.ac.uk/visit/wpy/



© TONY WU / WILDLIFE PHOTOGRAPHER OF THE YEAR



© LANCE VAN DE WYER / WILDLIFE PHOTOGRAPHER OF THE YEAR



1) **WINNER WILDLIFE PHOTOGRAPHER OF THE YEAR 2016:** *Entwined Lives* by Tim Laman: A young male orangutan makes the 30-metre climb high above the canopy in Gunung Palung National Park, West Kalimantan. The orangutan climbs to feast on the crop of figs. Tim knew that there was no route through the canopy other than up the tree. But he had to do three days of climbing up and down, to place in position several GoPro cameras to trigger remotely. This was the shot he visualised, looking down on the orangutan within its forest home.

2) **WINNER UNDERWATER:** *Snapper Party* by Tony Wu: For several days each month, thousands of two-spot red snappers gather to spawn around Palau in the western Pacific Ocean. The action is intense as the fish fill the water with sperm and eggs, and predators arrive to take advantage of the rich bounty. Tony returns every year to try to capture the event. Noticing that the spawning ran 'like a chain reaction up and down the mass of fish', his success finally came when he positioned himself so that the action came to him.

3) **FINALIST BLACK & WHITE:** *Playing Pangolin* by Lance van de Vyver: Lance tracked a pride in South Africa's Tswalu Kalahari Private Game Reserve for hours before they stopped by a waterhole, but their attention was not on drinking. The lions had discovered a Temminck's pangolin. This nocturnal mammal curls up into an impregnable armour-plated ball under threat. It was 14 hours before the pride moved off to hunt. The pangolin didn't appear injured, but died shortly after, probably from the stress of capture and being out in the heat all day.

4) **WINNER BIRDS:** *Eviction Attempt* by Ganesh H Shankar: These Indian rose-ringed parakeets weren't happy. They returned to their nesting hole in India's Keoladeo National Park, to find that a Bengal monitor lizard had moved in. The birds set about trying to evict the squatter. They bit the lizard's tail, hanging on for a couple of seconds at a time, until it retreated into the hole. They would then harass it when it tried to come out to bask. The action only lasted a couple of seconds at a time and was fast-moving, but went on for two days.



WINNER MAMMALS: *The Aftermath* by Simon Stafford: Thousands of wildebeest on migration through the Maasai Mara had massed at the Mara River, nervous of the crossing and the crocodiles lying in wait. They surged forward and the river became a maelstrom of flailing hooves and crocodiles. In the panic, they carved gullies in the riverbank, and more wildebeest slipped down and died under the hooves of the ones coming out of the river. As Simon watched from the other side of the river the next morning, spotted hyenas were already feeding.



1) FINALIST MAMMALS: *Wild West Stand-Off* by Charlie Hamilton Jones: A grizzly bear charges at ravens trying to grab a piece of the feast in Grand Teton National Park, in western US. "Approaching a bear's lunch is a dangerous thing to do," says Charlie. So there were strict protocols for getting out of his vehicle every time he went to check his camera trap. Over five months, he had thousands of images of ravens and vultures, but only a few of wolves or bears, and none were up to the high standards he set himself, until this one.

2) WINNER PLANTS AND FUNGI: *Wind Composition* by Valter Binotto: With every gust of wind, showers of pollen are released, lit up by the winter sun. To create the dark background, Valter backlit the flowers. "The hardest part was capturing the female flowers motionless while the catkins were moving," explains Valter. "I searched for flowers on a short branch that was more stable." Using a long exposure to capture the pollen's flight, and a reflector to highlight the catkins, the wind finally delivered the composition he had in mind.

3) WINNER THE WILDLIFE PHOTOJOURNALIST AWARD: *The Pangolin Pit* by Paul Hilton: Nothing prepared Paul for what he saw: 4,000 defrosting pangolins from one of the largest seizures of the animals on record, destined for China and Vietnam for exotic-meat or traditional medicine. Pangolins have become the world's most trafficked animals. This illegal trade, along with habitat loss and hunting, means that the four Asian species are endangered or critically endangered, and Africa's four species are heading that way.

4) WINNER YOUNG WILDLIFE PHOTOGRAPHER OF THE YEAR 2016: *The Moon and the Crow* by Gideon Knight: The spindly twigs of the sycamore silhouetted against the sky "made it feel almost supernatural, like something out of a fairy tale," says Gideon. Positioned on a slope opposite, he tried to capture the perfect composition, but the crow kept moving. Just as the light was about to fade beyond the point that photography was possible, his wish came true, and an ordinary London scene turned into something magical.



THE MOST IMPORTANT IMAGES OF ALL TIME

TIME MAGAZINE COMPILES A DEFINITIVE LIST OF THE MOST IMPORTANT IMAGES THAT WILL INSPIRE, INFLUENCE AND SHOCK, AND THE STORIES BEHIND THEM

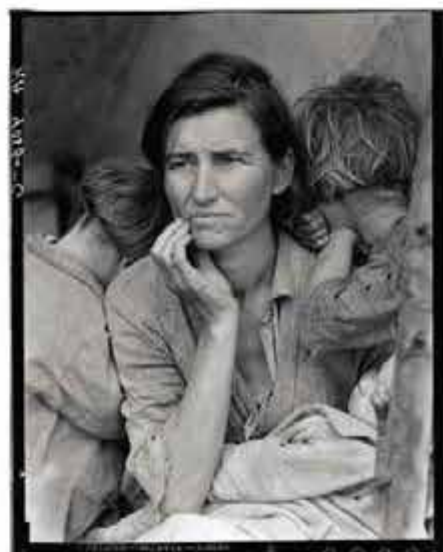
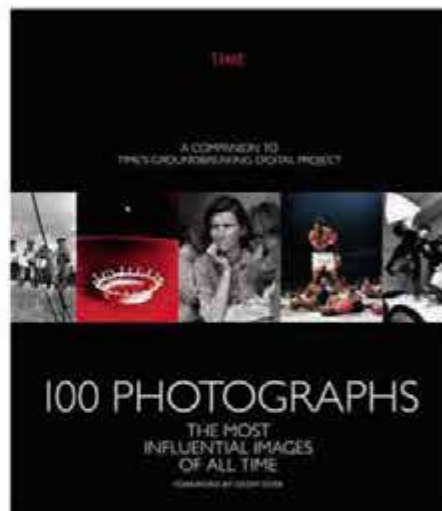
A MAN STANDS defiant in the path of four tanks in Beijing's Tiananmen Square, a sailor embraces with a nurse in Times Square as the Second World War comes to an end, Muhammad Ali towers over a toppled Sonny Lister, and an emaciated Sudanese child collapses while a vulture watches on. Photography has the power to tell stories like no other medium, and some of the most memorable and powerful images in history can be instantly conjured in our minds by their description alone.

TIME magazine has compiled an incredible collection of what it is calling the 100 most influential images of all time. Rather than listing the images in a gallery, void of context, TIME has added extra depth to the project by explaining the story behind each image in great detail, providing a vital history lesson to anyone with an interest in photography. The earliest image in the collection is from 1826, and is the first known photograph, 'View from the Window at Le Gras' by Joseph Nicéphore Niépce, while the most recent addition is Nilüfer Demir's tragic and tear-jerking image 'Alan Kudir', from 2015, showing the body of a deceased three-year-old Syrian refugee laying face-down on the beach.

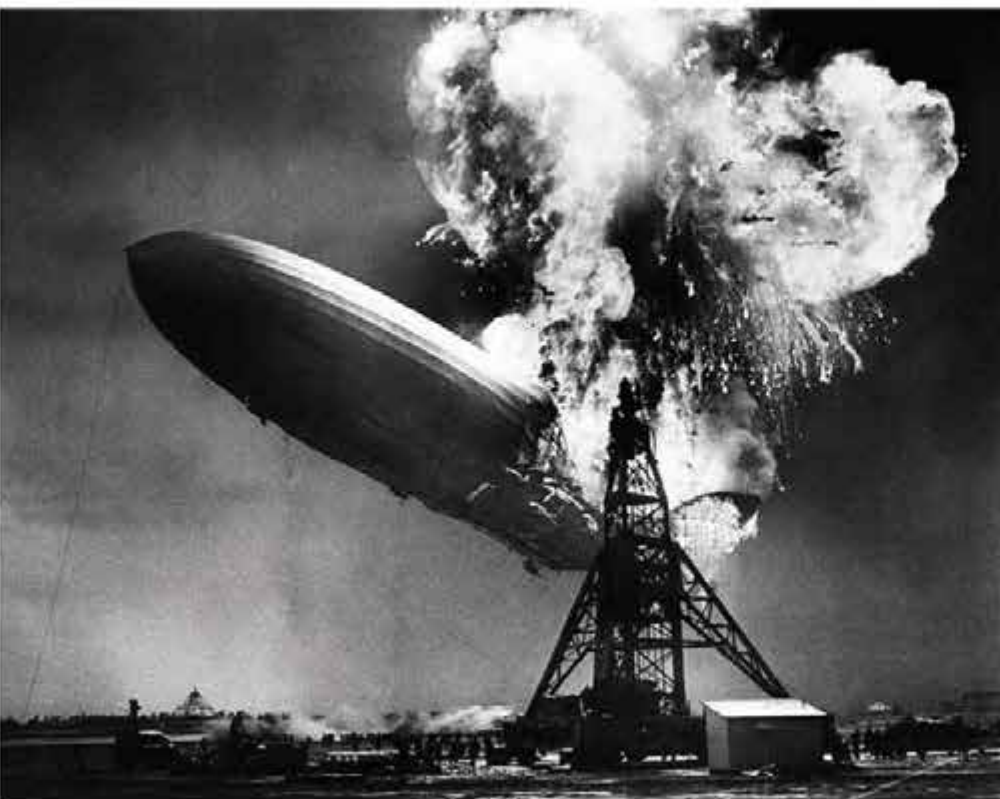
To compile and whittle down the collection to just 100 images, TIME contacted some of the most experienced curators, historians and photo editors around the world, as well as highly regarded photographers, journalists and editors. Many of the images you'll be familiar with, but we almost guarantee there will be some that are new to you too. While some have been selected as showing key moments in history, others have been chosen for their impact on the progress of humanity, or for being important moments in photography. Around 20 of the images are accompanied by short video documentaries too, offering an extra insight and background into each image. From times of great elation and success, to the atrocities of war and famine, famous faces to great tragedies, the collection is as powerful as it is varied.

Alongside the digital collection, TIME are also offering a hardcover book, *100 Photographs: The Most Influential Images of All Time*. It's available to order in the UK from Amazon for around £22. To view the full collection, visit: 100photos.time.com

Clockwise from right: Dorothea Lange's *Migrant Mother*, Nipomo, California, 1936; Alfred Eisenstadt's *V-J Day In Times Square*, New York, New York, 1945; Sam Shere's *The Hindenburg Disaster*, Lakehurst, New Jersey, 1937



DOROTHEA LANGE



SAM SHERE



ALFRED EISENSTADT



STUDENT PHOTOGRAPHER OF THE YEAR

HENRY NATHAN, an undergraduate student at the University of Leeds, has won this year's Calumet Student Photographer of the Year award, with an atmospheric travel image of a man and his dog in Skylight Cave, Oregon, United States. The cave is so named for the shafts of daylight that pierce into the volcanic cavern from above, which only occurs at certain times of the year. Henry explains how he captured his winning image, "We woke up early and visited these caves and had to hit an exact time to make sure we got the perfect light. The caves only shine light

through for about a month a year so we were very lucky to see the light beams. To enhance the lighting we used a smoke bomb. The dog in the photo posed with his owner, creating the perfect subject."

The 20-year-old student fended off over 850 other entries and netted himself a prize package worth over £11,000! Ten runners up were also chosen, each of them receiving a £20 Calumet voucher and a magazine subscription. To view the top images for yourself, and marvel at the photographic talent of the future, visit: <http://bit.do/SPOTY2016>



WHAT GOES UP, MIGHT COME DOWN

The GoPro Karma, announced earlier this year, seemed to be the ultimate gadget. A stabilised drone that could pack away in a compact case and included a detachable gimbal for smooth handheld footage too. Despite delays in fulfilling orders, the drones soon started to arrive, and it looked like GoPro was onto a winner – that was until Karmas started falling out of the sky due to power failure.

A drone crash could prove fatal, and GoPro have since issued a recall on all Karmas, even if your model shows no signs of failure. GoPro are issuing full refunds until the issue is resolved, and are offering a free GoPro Hero5 camera as compensation for those affected in the U.S. It's unclear whether any shipments made it to the U.K. prior to the recall, or whether the compensation offer applies here too.

If you purchased a Karma, contact GoPro via their website to arrange for a refund. Let us know if you had any issues on Twitter @digitalslrphoto. www.gopro.com

THE SINCEREST FORM OF FLATTERY?

HERE'S A VERY, very bizarre story. It's no secret that being successful on Instagram can be lucrative. Instagram power couple and travel photographers Jack Morris (@doyoutravel) and Lauren Bullen (@gypsea_lust) are no strangers to this – they have a collective following over 2.4 million followers, and spend their days travelling the world and sharing wonderful images of themselves and their whereabouts whilst promoting products and destinations.

A fantastic lifestyle, and nothing unusual in this day and age. That is until Lauren noticed another Instagrammer by the username of @diana_alexas copying her images. That's not to say, downloading and resharing them, but actually visiting the same locations, using the same compositions, wearing the same clothes, posing in the exact same manner and often using the same image captions!

In Morocco, Italy, Spain and Greece, Diana appears to go to extreme lengths in over 15 examples to tread in Lauren's footsteps, with no acknowledgement. Not only is this an audacious approach, but it must also cost a huge amount of money, and take huge time and effort to achieve. And that's without sourcing matching wardrobes and props, often just days after the originals are shared.

Since the story broke, @diana_alexas's account has been made private and, while Lauren's plight was originally met with sympathy online, once the story picked up pace, many people started calling it a hoax. In some images the locations would have been very hard to find, down back alleys in Marrakesh for example, or in hotel suites, especially so as Lauren didn't geotag many of the originals. Questions have also been asked as to why the girls' outfits fit differently, suggesting they're in cahoots and sharing the same clothes. Furthermore, and crucially, a Google search reveals an old Twitter account in the name of @DianaAlexaS that is linked to Lauren's email address.

Lauren maintains that this isn't a hoax, but says she has been in contact with Diana, and has deleted her original blog breaking the story. In an interview with *Cosmopolitan* magazine Lauren said, "Jack and I are already well established influencers who work with such high clients and have a reputation to lose. Why would we risk planning something that could backfire in our face?"

Lauren's account has jumped some 300,000 followers since the story broke, so either way it doesn't seem like the saga has done her any harm.



Above: Lauren shared the incredible copycat story on her blog (gypsealust.com) and on her Instagram account.

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TALES BY LIGHT

JUST ONE MORE?

IF YOU'VE ALREADY binge-watched *Breaking Bad*, made light work of *Making A Murderer*, engorged in *Orange is the New Black* and polished off *Stranger Things* in record time then don't fret – there's a new reason to Netflix and chill (that can't possibly mean anything other than what it says, right?). Canon Australia's excellent photography television series *Tales By Light* has been snapped up by the streaming service and is now available to watch online, anywhere in the world. Shot in ultra-sharp 4K resolution, *Tales By Light* is a collaboration between Canon Australia and *National Geographic*, and follows five leading photographers – Krystle Wright, Darren Jew, Peter Eastway, Richard l'Anson and Art Wolfe – through some amazing adventures as they share their talent for visual storytelling in each episode. *Tales By Light* is available to stream now via Netflix. What's more, if you're not a member you can sign up now and get your first month free – that should give you plenty of time to take in the first series in its entirety.

www.netflix.com/gb/

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Pro tips and tricks

ESSENTIAL KIT: DON'T LEAVE HOME WITHOUT IT...

PACK THE RIGHT KIT TO ENSURE YOU KEEP ON SHOOTING, EVEN IN A PINCH. HERE'S A SELECTION OF THRIFTY CAMERA BAG ESSENTIALS

 <p>GAFFER TAPE Whether you need to temporarily mend broken equipment, achieve a complex shooting angle using a homemade rig, or even fashion a makeshift filter holder on the fly, there's not much that gaffer tape can't do.</p>	 <p>POLARISING FILTER If you're going to take one filter with you, make it a polariser. They cut down glare and reflections, saturate colour and can be used to extend exposure times. It's also one of the few filter types that can't be faked in Photoshop.</p>	 <p>LENS CLOTHS Dirty optics can ruin an image at just the wrong moment. Always keep a couple of lens cloths, or a lenspen, to hand to wipe off dust, water spray and greasy fingerprints. It's always better than using the inside of your t-shirt!</p>	 <p>MULTI-TOOL Whether your tripod plate needs tightening, or your tripod itself has come loose, a good multi-tool takes up precious little space and can be the difference between getting the shot or going home empty-handed.</p>	 <p>HAND WARMERS Not only are they good for warming your hands (duh) in the cold, but they are also ideal for keeping spare batteries warm (to prevent power drain), or for wrapping around your lens during night shooting to prevent dew forming.</p>	 <p>TORCH From finding your way to and from a location to light-painting or locating those darned spare memory cards in your camera bag at night, a torch is a must-have if you're heading out shooting after dark.</p>
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LANDSCAPE PHOTOGRAPHER OF THE YEAR WINNER: *Starling Vortex* by Matthew Cattell

© MATTHEW CATTELL / TAKE A VIEW – LANDSCAPE PHOTOGRAPHER OF THE YEAR AWARDS

TAKE A VIEW OF GREAT BRITAIN

BREATHTAKING DIVERSITY ON DISPLAY AS THE TENTH TAKE-A-VIEW LANDSCAPE PHOTOGRAPHER OF THE YEAR IS CROWNED

THE TAKE-A-VIEW LANDSCAPE Photographer of the Year awards is celebrating its tenth year of cultivating inspiring and wonderful landscape images! One notable theme emerged from the 2016 award: the diversity of the landscapes across these isles. From wind-swept coastal views to urban reflections, the frantic buzz of rush-hour traffic to serene waters, and desolate, wild and untouched landscapes to gritty industrial scenes, there's no denying that the landscapes of the UK are a rich tapestry like no other, and the photographers that call these shores home and visit from afar alike have mastered the art of conveying this with style.

This year's Landscape Photographer of the Year was chosen as Matthew Cattell, for his dynamic image 'Starling Vortex' (above), depicting Brighton's skeletal West Pier, peppered by a flock of starlings above rough seas. Speaking of hearing about his accolade and the £10,000 grand prize, Matthew commented, "I was in utter disbelief and completely speechless and, even now, it still feels like a dream. To be held in such high regard amongst so many other talented photographers is truly humbling."

A host of other winners were named, including Hannah Faith Jackson as the Young Landscape Photographer of the Year, Mark Gilligan as the Great Britain #OMGB winner, Francis Taylor as the Network Rail Lines In The Landscape winner and Damian Ward as the Adobe Prize winner.

The Landscape Photographer of the Year exhibitions are hosted by Network Rail, and you can visit a free exhibition of this year's prized images at Waterloo Station, London until 5 February 2017. From there, the exhibition goes on a nationwide tour to some of Britain's main railway stations. There's also a book of winning images available – *Landscape Photographer of the Year Collection 10*, by AA Publishing, for £25, with a tenth anniversary book to follow in April 2017. For more information on the winners, exhibitions, books and future competitions, visit: www.take-a-view.co.uk



ADULT YOUR VIEW RUNNER-UP: *A82* by Daniel Pecena

© DANIEL PECENA / TAKE A VIEW – LANDSCAPE PHOTOGRAPHER OF THE YEAR AWARDS



ADULT CLASSIC VIEW WINNER: *Shelter From The Storm* by Dougie Cunningham

© DOUGIE CUNNINGHAM / TAKE A VIEW – LANDSCAPE PHOTOGRAPHER OF THE YEAR AWARDS



ADULT LIVING THE VIEW WINNER: *Chrome Hill* by Martin Birks

© MARTIN BIRKS / TAKE A VIEW – LANDSCAPE PHOTOGRAPHER OF THE YEAR AWARDS



ADULT CLASSIC VIEW HIGHLY COMMENDED: *Sgurr an Fhìdhleir* by Sebastian Kraus

© SEBASTIAN KRAUS / TAKE A VIEW – LANDSCAPE PHOTOGRAPHER OF THE YEAR AWARDS



ADULT URBAN VIEW WINNER: *Demolition* by Lesley Smith

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THE GREAT BRITAIN #OMGB WINNER: *Finding Gold* by Mark Gilligan

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SIZE MATTERS!

IN AN AGE OF big and loud it's nice to see the smaller things appreciated, as the winners of the 42nd Nikon Small World Photomicrography Competition are announced. The annual award seeks to recognise scientists, photographers and hobbyists specialising in recording our world in microscopic detail. First place went to Dr Oscar Ruiz, Ph.D, for an amazing head-on image of a four-day old zebrafish embryo (above). Dr. Ruiz studies genetic mutations in the zebrafish using advanced microscopic time-lapse techniques in order to understand the development of facial abnormalities in humans. His work is undertaken at the University of Texas MD Anderson Cancer Center.

Over 75 other winners were also recognised in the competition, as over 2,000 entries flooded in from over 70 countries. To see the winning images yourself, and to find out more about the annual award, visit: www.nikonsmallworld.com



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Photo app



Patch

Price: Free (in-app purchases) / Platform: iOS

If you're an iPhone user feeling a bit jealous of the new iPhone 7 Plus's fancy dual camera set-up and new bokeh-simulating 'Portrait Mode' then don't worry – Patch is here to help. Suitable for all iPhones, Patch doesn't rely on real depth information from the dual cameras to create the blur, but rather works via a very simple layer masking principle. You load in an image you've already taken (the app doesn't have a camera function) and Patch will do some maths to try and figure out what bits you want sharp and which bits you want to blur. You can then adjust this mask using eraser and brush tools. Surprisingly, it works quite well, providing you use the right kind of image. Patch tells you, very specifically, that it works best on portraits composed from above the waist up, but you might also want to avoid images taken against layers of different depths, as Patch just applies a uniform blur to the background. The mask tools are a bit clunky, and we'd like to see softer-edged and different size mask brushes, but the concept is great and works really well. For free, you can't complain!



WHAT WE'VE BEEN WATCHING

LOOKING FOR VISUAL INSPIRATION? HERE'S WHAT THE *DIGITAL SLR PHOTOGRAPHY* TEAM HAS BEEN WATCHING THIS MONTH...



DRONE FLASH

By Elinchrom

Action sports? Check. High-speed sync flash? Check. Drone? Check. The ingredients for an exciting shoot are already there, and photographer David Robinson delivers the goods. David, along with Red Bull mountain biker Matt Jones, head to Austria to shoot an action image with a difference – it's lit entirely using drone-mounted Elinchrom studioflash. The idea behind the drone light was to make the light 'fit' within the scene, and make the light come from a natural direction – i.e. up above the rider, mid-jump. Great stuff! http://bit.do/DSLR_1221



SIR ELTON JOHN'S MODERNIST PHOTOGRAPHY COLLECTION

By Tate

You know him as one of the world's most popular musicians, but Sir Elton John is also a huge fan of photography, and boasts an impressive collection of prints. This tour of his 18,000 square foot Atlanta apartment showcases some of his favourite works. His collection exceeds 8,000 images, and the residence resembles an art gallery, with barely an inch of wall space free. Around 190 images from Sir Elton's collection are now on display at London's Tate Modern. http://bit.do/DSLR_1222



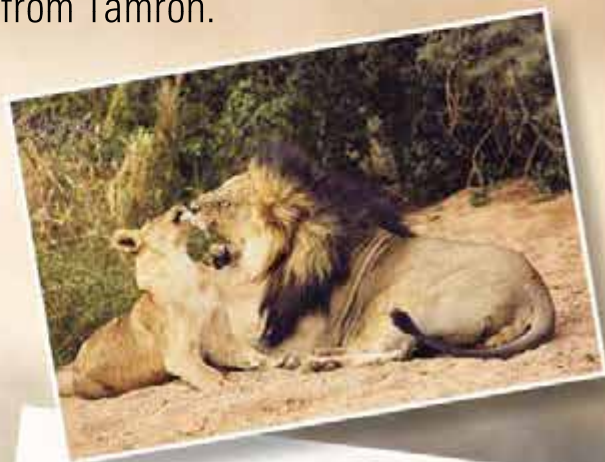
COMBINING FITNESS & FIRE PHOTOGRAPHY

By Brandon Wells

In this short behind-the-scenes video from a recent shoot, American fitness photographer Brandon Wells tackles the tricky technique of using fire to emphasise motion in fitness photography. By using a slow shutter speed, combined with a quick pop of flash in a dark gym, Brandon shoots a series of action images that record the fire as a streak of light, capturing an exciting, dynamic and effective portrait, whilst being conscious of the safety implications of working around fire. http://bit.do/DSLR_1223

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The Location Guide

Torridon

This wild and rugged region of the north west Scottish Highlands is home to dramatic mountains, ancient forests and picturesque lochs. It makes for a great photographic destination at any time of year

LOCATION: NORTH WEST SCOTLAND / **OS REFS:** EXPLORER 433 TORRIDON – BEINN EIGHE AND LIATHACH

1) LOCH TOLLALDH:

This roadside loch near Tollie Farm on the A832 east of Gairloch makes a great location to visit at dawn.

 Torridon

Torrion, one of the wildest and most scenic parts of the west Highlands, is located on the Scottish mainland opposite the northern end of the Isle of Skye. The region offers high rugged mountains, wild glens, moorland, lochs of various sizes, pine and birchwoods, rivers, waterfalls, rocky coastline and sandy bays – all wonderful elements for successful landscape photography.

The village of Gairloch is a good place to base yourself for a few days (see *Useful Information*) and is also a profitable hunting ground for images. It's worth going for a wander around the small harbour just off the A832 near the Old Inn. There you can shoot colourful details of fishing nets, ropes, stacks of fish crates and peeling paintwork on the hulls of old boats – as well as the fishing boats themselves reflecting in the harbour water on a calm day. The sandy beach just beyond Gairloch Golf Club faces west, making it a good spot for sunsets – especially if the tide's receding and colour from the sky reflects on the wet sand.

Only a short walk from the Old Inn is the impressive Easan Bana Waterfall, more commonly known as Flowerdale Falls. Like all falls, much depends on the amount of water that's flowing in the river, which in turn is dependent on the amount of rain that has fallen, but more often than not the falls are in good flow and highly photogenic. Use a wide-angle lens to capture the falls and the river they feed flowing around boulders, or switch to a telezoom and fill the frame with



Lee Frost: “Why I love Torridon”



"The Scottish Highlands are a mecca for landscape photographers – nowhere else in the UK will you find such a diverse range of scenery. The

further north you travel, the wilder and more dramatic the landscape becomes, and Torridon is way north! It may take forever to get there, but once you do you'll find the region captivating and inspiring. I'll never forget looking down on Loch Maree at dawn and watching veils of mist drift over the water as the sun rose, or capturing mirror-like reflections of vibrant autumn colours in the flat calm water. Glen Torridon is a great place to spend a stormy afternoon, capturing the wild landscape beneath dark skies, while the views over Upper Loch Torridon from Ben Dampb will take your breath away. If you enjoy shooting woodland, the Beinn Eighe National Reserve on the shore of Loch Maree is a must – it's home to ancient Scots pine and acres of birch trees that look amazing during autumn."

the upper falls cascading down a vertical cliff face. Shutter speeds of 1/4sec or longer will blur the water nicely. Overcast weather provides the best light for the falls and autumn is a great season to shoot them as the banks either side will be full of vibrant colour.

Heading south from Gairloch, the road runs along the west of Loch Maree, dominated on one side by one of Scotland's most distinctive mountains – Slíoch. You get great views of the loch as you drive, and on a calm day the reflections are stunning, especially during early morning, so it's worth parking up and heading down to the lochside. There's a fantastic view of the islands in the loch from the Slatterdale car park off the A832, between Gairloch and Kinlochewe.

At the southeastern end of Loch Maree, just off the A832 near Kinlochewe, is the

car park and visitor centre for the Beinn Eighe National Nature Reserve – Britain's first National Nature Reserve. The reserve covers 48 square km, stretching from the loch to the mountaintop, and includes one of the best remnants of ancient Caledonian pine forest in Scotland. You can park there and get to the lochside as well as exploring the nearby woodland, while the Glas-Leitir car park about two miles west of the visitor centre on the A832 is where the mountain and woodland trails start.

A great dawn location is near Tollie Farm at the western end of Loch Maree. You get a fantastic view looking down and along the loch with the whitewashed farm buildings in the middle distance to add scale. Mist is quite common, especially during autumn, and this makes a wonderful addition to the scene.

Useful Information

Where is it? Torridon is in the north west of the Scottish Highlands, north east of the Isle of Skye and approx 60 miles west of Inverness.

Getting there: From the south take the A9 north from Perth to Inverness or the A82 via Fort William to Inverness. Continue on the A9 from Inverness, then take the A835 near Tore. Just after Garve turn left onto the A832. At Achnasheen continue on the A832 to Kinlochewe, where you can branch right on the A832 towards Gairloch or branch left onto the A896 towards Torridon. A slower but more scenic option is to travel to Fort William on the A82 via Rannoch Moor and Glencoe, then take the A82 and A87 towards Kyle of Lochalsh head and pick up the A890 Wester Ross Coastal Trail a few miles before Kyle. After Strathcarron, turn left onto the A896 and follow it to Shieldaig, Torridon and Kinlochewe. Travelling without a car or motorbike is impractical, though you can get as close as Achnasheen by rail from Kyle of Lochalsh or Inverness.

Places to eat and sleep: Gairloch is a good base for exploring the area. The Old Inn (theoldinn.net) and its sister hotel The Gairloch Highland Lodge (gairlochhighlandlodge.net) are good options to sleep and eat. Also consider The Myrtle Bank Hotel (themyrtelegairloch.co.uk) and Gairloch View B&B (gairlochview.co.uk) too. Near Annat, there's The Torridon (thetorridon.com), which is quite pricey, but 100m away is the less pricey Torridon Inn, run by the same people.

Local camera shops: Ffordes Photographic Ltd, The Kirk, Wester Balblair, By Beauly, Inverness-shire, 01463 783850, (ffordes.com); Jessops, 26 High Street, Inverness IV1 1JQ, 01463 235727.

1) LOCH MAREE: This scene shows a flooded tree after heavy rain. **2) GLEN TORRIDON:** Wild scenery and vibrant autumn colours. **3) BEINN EIGHE NATIONAL RESERVE:** A birch tree swaying in the wind. **4) UPPER LOCH TORRIDON:** A dramatic view towards Beinn Alligin. **5) FLOWERDALE FALLS:** This is a great location for photography and is found near Gairloch.

Dayspring – on the edge of Loch Torridon at lower Diabaig, that was popular with photographers, but it may no longer be there.

The other road runs along the South side of Loch Torridon and provides outstanding views across the loch to Beinn Alligin, with foregrounds of moorland, erratic boulders and pine trees. There are various viewpoints along the road, the most popular one being near the Ben Damph estate looking high over the loch to the distant mountains. It's an evening shot and if you're lucky, you'll get late light breaking and lighting up the

To reach the viewpoint, take the A832 east from Gairloch or south from Poolewe and park up at or near the turnoff to Tollie Farm.

If you're heading there from Gairloch, you'll pass a small loch on your right just before you get to Tollie Farm – Loch Tollaidh. On a calm morning this is well worth a stop as the dawn colours will be mirrored in the still water. Either shoot there before going to the Tollie Farm viewpoint, or after. It all depends on the light at the time, so make sure you're in the area at least 40 minutes before sunrise so you can decide where to start without chasing the light.

At Kinlochewe, the A896 turns into Glen Torridon, which is wild and unspoilt and well worth a few hours of your time. The views of Liathach and Beinn Eighe from the shores of Loch Clair are unsurpassed anywhere

in the Highlands, so fingers crossed for a calm day! If you don't get ideal conditions, don't worry though as there are plenty of other options in the glen, from single trees captured against the sky, to slow shutter images of the river that runs through the glen (A'Ghairbhe). A bridge crosses the river near Loch Clair and gives you a great view down it. In Autumn you also get amazing colours in the glen, with the yellows of deciduous trees contrasting with the greens of Caledonian pines – use a telezoom to fill the frame.

At the western end of the glen, roads lead along both sides of Loch Torridon and it's worth making time to explore both. One leads to the secluded fishing and crofting village of Diabaig, which has been used as a location in several films. For many years there was a wrecked fishing trawler – the



Torridon

landscape, but the soft colours of dusk can work well too, even if you don't get direct light. There are numerous big boulders that you can use as foreground interest.

If time permits, it's worth driving along the north side of the Applecross Peninsula as far as Kenmore to take advantage of several locations with views back to the peaks of Glen Torridon. To get there head south from Shieldaig on the A896, then take a right just after you pass the southern end of Loch Torridon, and follow the road.

Ten miles west of Gairloch lies Red Point where there are beaches of reddish sand, low dunes and good rocky outcrops, while in evening there's the possibility of a sunset over the Isle of Skye. From the end of the road, a one mile walk leads to an abandoned salmon fishing station, which has proved a popular location with photographers – old buildings,

fishing items and rusty anchors – though we can't vouch for the state of the buildings. A short distance along the Red Point road are two small lochs, one with a tree-clad islet, and these make great locations on a calm, misty dawn. Another coastal location close to Gairloch is Rubha Reidh lighthouse, situated on a remote headland.

Heading north out of Poolewe on the A832, just before Tournai, you'll pass a small loch – this is Loch Nan Dailthean. It's a fantastic location to shoot at sunrise, as you're looking east over the loch with great views towards dramatic mountains. If time permits, head back in the afternoon too, as the scene is bathed in warm light. In calm weather you can take advantage of reflections, and during autumn the colours are truly breathtaking.

Another option from Poolewe is to drive along Loch Ewe to Inverasdale and Cove, where there are beautiful deserted beaches, such as Firemore Beach, as well as good vistas

looking inland. Alternatively, head to Mellon Udrigle where you'll find another stunning sandy beach, complete with shallow streams and sand ripples – well worth a visit at sunrise if you can squeeze it in!

The furthest north you're likely to venture is Gruinard Bay, where there are fantastic views over the bay and coastline from the side of the A832 – you'll see the bay appear below, so just park where you can. This view is best captured in the evening when the coastline is bathed in warm light from the low sun, or at dusk when the sun has set.

Torridon isn't as popular for photography as some other Highland regions, partly because it's so far north and also because it's not so well known. These are both good reasons to visit, because it means you'll be shooting scenes that haven't been shot a million times before, and it's unlikely you'll arrive at a location only to find there are already hoards of photographers there!



ALL IMAGES: LEE FROST

Start Shooting

Things to shoot: Torridon is home to a wide range of stunning scenery. Take your pick from dramatic mountains, beautiful lochs, unspoiled coastline, deserted beaches, ancient woodland, wild glens and picturesque waterfalls. When you're not shooting wide views you can capture intimate details. It's also a great place to experiment with long exposures and even shoot infrared.

When to go: Torridon, like the rest of Scotland, can be magical at any time of year. That said, autumn is perhaps the best season. The midges will be gone and the moorland vegetation will provide lots of rich colour, while the birch trees should be acquiring their autumnal golden-yellow. The weather can be variable, but that only adds to the wild, dramatic nature of the landscape. A mix of clear blue skies, storm clouds, rainbows, frost, mist and even the first snowfalls on the mountain tops can be expected in the space of a few days.

Recommended kit: A good general kit for landscape photography will cover all your needs. Zooms covering wide-angle to mid-telephoto (12-200mm for APS-C sensors and 16-300mm for full-frame) will allow you to shoot everything from sweeping views to distant mountains. Pack a tripod and remote release, plus the usual filters – ND grads, a polariser and a ten-stop filter. Weaker NDs (0.6 and 0.9) can be handy for shots of rivers and waterfalls.

6) BENDAMPH: Upper Loch Torridon captured at dusk.
7) FIREMORE BEACH: It's a remote spot, but well worth a visit.
8) GRUINARD BAY: This stunning view is captured literally from the roadside 9 & 10) LOCH NAN DAILTHEAN: On still autumn days, this location is ideal for capturing stunning landscapes with perfect reflections and seasonal colours.



Keep shooting! Other locations near Torridon (*distances measured from Gairloch)



1) PITLOCHRY

If you head to Torridon via Perth during autumn, stop at Pitlochry to photograph the stunning foliage colours on the banks of the River Tummel or Loch Tummel. The best views are from the pedestrian suspension bridge over the river.

150
MILES
S. EAST



2) ACHILTIBUIE

If you have time after Torridon, head up to Ullapool and explore the Coigach coast for a couple of days. It's remote, unspoiled and quiet. At Achiltibuie you'll find old boats and fishing paraphernalia along the beach and stunning sea views.

79
MILES
N. EAST



3) PLOKTON

If you take a Wester Ross Coastal Trail to Torridon, break up the long journey with a detour to the pretty village of Ploktion, on the shore of Loch Carron. There's a picturesque harbour there and tranquil views over the loch.

62
MILES
SOUTH

ALL IMAGES: LEE FROST



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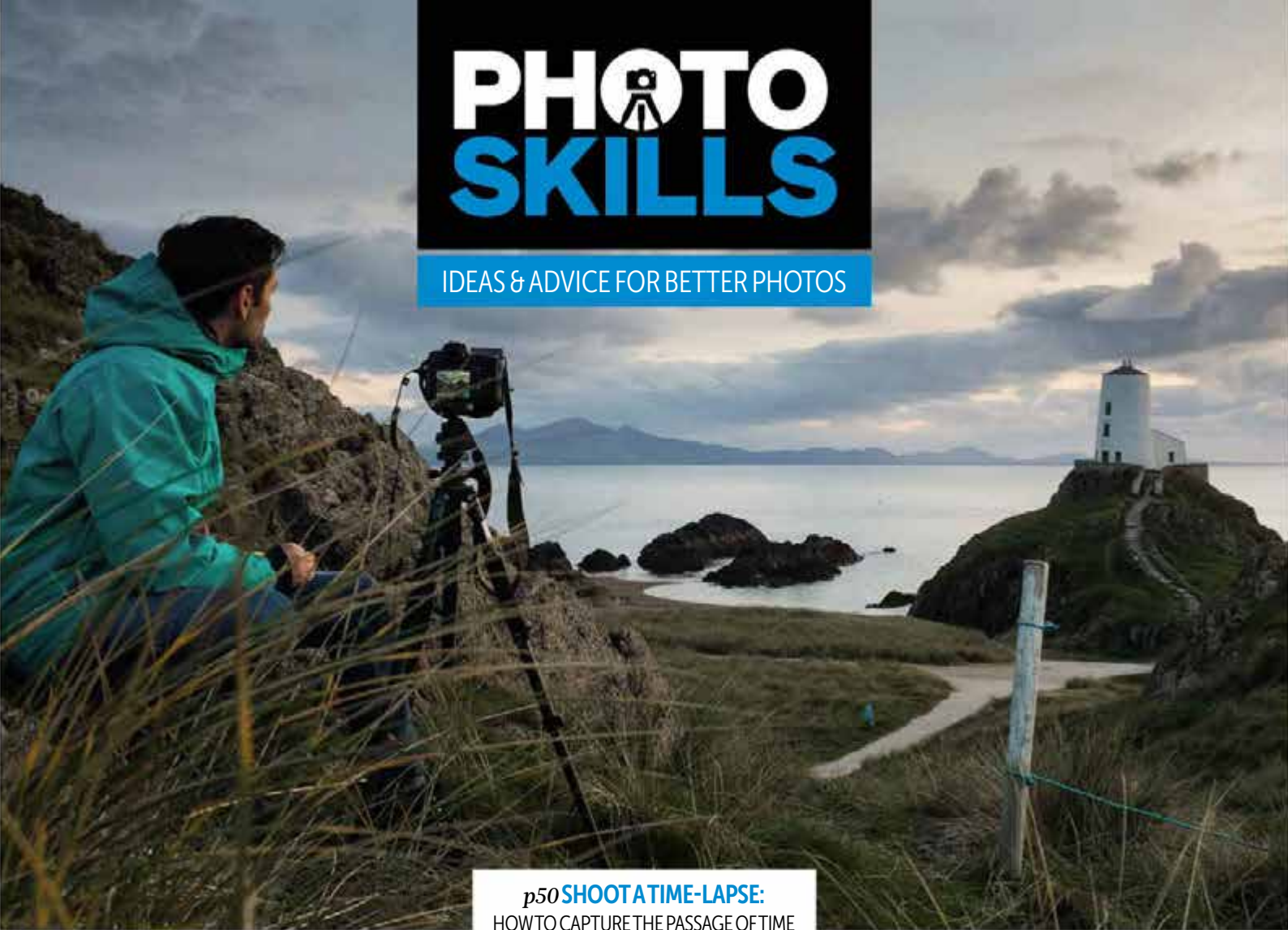
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PHOTO SKILLS

IDEAS & ADVICE FOR BETTER PHOTOS



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HOW TO CAPTURE THE PASSAGE OF TIME



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CALM WATERS

IT'S A CLASSIC LANDSCAPE IMAGE, BUT ONE THAT REQUIRES A CERTAIN ATTENTION TO DETAIL TO EXECUTE WELL. LANDSCAPE EXPERT ROSS HODDINOTT SHARES HIS PROFESSIONAL ADVICE ON PHOTOGRAPHING JETTIES

CAMERA: NIKON D810 LENS: NIKKOR AF-S 17-35MM F/2.8



JUST WHY ARE jetties and piers such popular subjects among landscape photographers? It's easy to explain – photographers love water and motion, and jetties and launches are found nestled by the water's edge. They're usually wooden and tactile – getting weathered and misshapen over time. Therefore, they look beautifully in-keeping with their environment. Jetties also imply travel, serenity or escape to our subconscious. Compositionally speaking, they create perfect foreground interest too, providing a logical and effective lead-in to the landscape beyond. They look great shot from the shore, directing the eye from one edge of the frame to the other. However, shots also look good taken from the jetty itself, looking directly down the walkway to create an enhanced feeling of symmetry.

They photograph well in colour, black & white and in all types of light. Jetties are hugely photogenic subjects – simple!

In the UK, one of the best places to photograph jetties is The Lake District, Cumbria. Most of the best-known lakes – for example, Ullswater, Coniston and Derwent Water – are home to a number of jetties, so you won't be short of choice. However, you can potentially find jetties anywhere where there is water – a little online research will reveal the options close to you. Using a sun calculator, like The Photographer's Ephemeris, you can predict the position of the sun in relation to your viewpoint beforehand. Doing so can be helpful, but you don't necessarily need a colourful dawn or evening sky to capture nice jetty shots. Jetties can photograph well

in almost any weather and even during the day, particularly if it's still, misty, moody or dramatic. However, one big advantage of shooting early or late in the day is that they're less likely to be busy with people. As a result, you can carefully set-up your composition and wait in one spot for the right conditions without fear of being asked to move, or a crowd of people forming in your shot!

I recommend a wide-angle focal range in the region of 16-35mm – this will allow you to get close and exaggerate the structure, while the zoom will offer versatility and precision. A tripod will provide stability and aid composition, while a slot-in filter system – like those from Cokin, Hitech or Lee Filters – will enable you to use graduated ND filters to control contrast and/or solid ND filters to creatively lengthen exposure time.



1 CHECK THE WEATHER

Jetties often work as part of a peaceful, restful scene. For this reason, landscape photographers typically favour a still, calm day to photograph boat launches. I checked the local forecast for Keswick – where I was staying – on the Met Office App. With the wind predicted to be 4mph at dawn, I felt optimistic the water would be reflective. Although the weather looked cloudy, this didn't deter me – grey skies can actually suit this type of scene well.



2 SHOOTING FROM THE SHORE

I arrived at my location – at Ashness launch, Derwent Water – over 30 minutes before sunrise, to give me sufficient time to find my spot and set up. I began by shooting from the shoreline, using the length of the jetty to direct the eye from right to left. However, I didn't like how the tops of the wooden poles either jugged above the horizon, or just overlapped the trees in the distance. In order to achieve better separation, I would need to change viewpoint.



3 SHOOTING FROM THE JETTY

The slightly more elevated viewpoint offered from the jetty itself allowed me to place the poles below the horizon. By doing so, they stood out more clearly against the water. My first composition from the jetty itself was rushed and not thought through, though. With the jetty placed to the right of the frame, the composition looks unbalanced, while the closest uprights on the right overlap and 'merge' together. Not good.



4 SYMMETRY You need to carefully consider your exact viewpoint and composition when shooting jetties in order to achieve the right separation and balance. This time, I took longer composing my shot, positioning my tripod and camera smack bang in the middle of the launch to allow me to shoot directly along the centre of the jetty. Doing so created a more pleasing, symmetrical composition, with the walkway creating a strong lead-in line and implied depth.



5 LONG EXPOSURE Unfortunately, the lake wasn't still enough to be reflective. To generate a feeling of calmness and tranquillity, I attached a ten-stop ND filter. My unfiltered exposure was 1/13sec. I used my Lee Stopper app to calculate that the exposure would be one minute 20 seconds with the filter in place. I switched my camera to Bulb mode and exposed for 80 seconds. However, the image was soft – I must have moved during the exposure and rocked the jetty.



A PEACEFUL OUTLOOK

The symmetrical composition and smooth water gives this classic landscape a calming effect. Perfect.

Exposure: 90 seconds at f/11 (ISO 125)



6 FINAL SHOT I tried again – this time intentionally staying still throughout the exposure so that I didn't rock the jetty and cause degraded image sharpness. Despite the conditions being mostly overcast and relatively uninteresting, the length of exposure rendered the rippled water glass-like and helped generate some interesting cloud motion. The simple, but striking composition suited the scene, while the use of a wide-angle created an interesting perspective.

KEEP THINGS LEVEL



Using a tripod will allow your eye time and opportunity to check that you have everything arranged equally, straight and balanced. To help ensure your camera is set up perfectly straight, try using a hotshoe-mounted spirit level or your camera's virtual horizon function – if it has one. On my Nikon D810, I can handily overlay the virtual horizon facility in LiveView by pressing the Info button a couple of times. By doing so, I could quickly and easily check that my camera was level.

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Light is everything™

MAKE YOUR OWN HOME STUDIO

NO STUDIO? NO PROBLEM! CAROLINE SCHMIDT GIVES YOU SOME EXPERT TIPS ON SHOOTING HIGH-END PROFESSIONAL PORTRAITS IN THE COMFORT OF YOUR OWN HOME

CAMERA: NIKON D800 / LENS: NIKKOR 50MM F/1.4G / FLASH: NIKON SB800 & WIRELESS FLASH TRIGGER

WHEN WINTER ARRIVES, it's easy to put down the camera with the excuse that it's too cold to shoot outdoors and you've no studio to work in, but just because you've not a dedicated studio doesn't mean your photography has to drop with the temperature. Any avid portrait photographer dreams of a space to shoot in that's decked out with the latest lighting gear,

props and plenty of room for creativity. The reality is, most photographers don't have that luxury. However, you don't really need your own studio – all you need is to temporarily take over enough space in your home to set up a background and a couple of flash stands with modifiers. Alternatively if you've got a good source of natural light, like French doors, you could use a pop-up backdrop or

dress foam core in wallpaper or fabric to utilise that space. There are no excuses really!

As you're likely working in close quarters, you'll need a focal length of 50mm or wider, depending on the crops you want and the distance you can put between you and the set-up. If you don't have space to step back a few metres and you want a full-length portrait, you may want to consider a 35mm lens.



HOW YOU CHOOSE to light your portrait depends on space and your desired end result, and in some ways bleaching the background is easier as you don't have to worry about shadows and only need two lights, set 45° either side of you – but, personally, I find that style can look quite unremarkable and ordinary. For a low-key shoot like this, using only one light and a reflector, you need to be particularly careful about crafting the light to limit uneven fall-off onto the background. This is one reason why feathering the flash for broad

lighting works well; the light skims the subject's face and mostly misses the backdrop allowing you to underexpose it. For the same effect with direct flash, normally you'd need to put several metres between the background and your subject to allow for the natural fall-off in light. Another reason for lighting in this fashion is that in most small studio spaces, you're often restricted by the height of the room and protruding ceiling lights, which can make positioning large modifiers at ideal heights and angles tricky or impossible – this way the flash only needs to be head-height.



2 BACKGROUND TO SUBJECT Here you can see what a shot would look like with a typical 45° light set-up and the subject close to the backdrop – it's okay but nothing special, looking a bit grey and flat. To increase contrast, put as much distance as you can between the background and your subject to reduce light spill. My subject is around two and a half feet from the background and approximately two feet from the light, which is just over three feet from the background.



3 ANGLE LIGHT AND SUBJECT Position the back edge of the modifier 90° to the subject's nose, and at their head height. It should be close enough to the subject that it's only just out of shot. If the light is angled too much towards the subject, your lighting will look flat; similarly, if the light is too far behind the subject's face you'll cast shadow on the opposite side. You want the light to kiss the face but fall off quickly. A reflector placed on the opposite side can offer helpful fill light.

1 SET-UP I'm working in a space of around 4x3m, but you can do this with less if you have a narrower backdrop; this one is 2.72x11m. Having cleared the space in my living room, I set up a backdrop stand and Colorama Storm Grey seamless. I've also added a pack of laminate flooring; a single pack that covers the width of my backdrop cost under £20. They're around one metre in length, which is perfect for the space I'm working in, but if you can put more distance between your subject and the background, I'd suggest buying two packs.

You could set up as many lights, reflectors and flags as you want, but here I'm using a single Nikon SB-800 flashgun inside an umbrella octobox. The larger the light source, the softer the light and this one metre octobox wraps the light around beautifully, especially at close range. It can help to put a mark on the floor, or a prop like a stool where you want your subject to be. For this technique you want them as far away from the background as you can, to limit the light reaching the backdrop and to keep it soft when using a mid-aperture.



4 SET THE EXPOSURE Select manual mode and your camera's sync speed or slower; for the Nikon D800 that's 1/250sec, so I set it to 1/200sec and ISO 200. You'll need to expose for the skin and, with the flash power at 1/8th, you'll likely need an aperture between f/7.1 and f/10. Here, at f/7.1, the shot may be correctly exposed but the aperture is too wide for the desired effect. By stopping down to f/10, the shadows are deepened and the background is darkened for the final image.



HOME AND AWAY!

To add depth, in processing, apply a *Black & White* adjustment layer, changing the *Blend Mode* to *Soft Light* and reducing the layer's opacity for the desired contrast.

Exposure: 1/200sec at f/10 (ISO 200)

FANCY A BREW?

IT'S THE TIME OF YEAR FOR SPICES AND COOKIES AND ALL THINGS FESTIVE! DINA BELENKO SHOWS YOU HOW TO CAPTURE THE MAGIC OF STEAM IN A SEASONAL STILL-LIFE THAT YOU HAVE TO TRY FOR YOURSELF...

CAMERA: NIKON D800 / LENS: AF-S VR MICRO-NIKKOR 105MM F/2.8G IF-ED / FLASH: 2X NIKON SB-910, STRIP SOFTBOX, DIFFUSER



WHEN THE CHILL of winter hits, there's no more cosy sensation than curling up indoors with a hot beverage of your choosing. Wrap yourself in a blanket, take a cookie, brew some tea with cinnamon and honey (or maybe you prefer coffee, punch or mulled wine) and watch the steam rising above the cup – that's how Christmas holidays should be. Why not capture this cosy moment and take some photos? Granted, capturing steam may be tricky, but it's actually easier than it looks with the right approach.

The essential gear you'll need is a light source and a tripod. For my still-life it's two

flashguns (one inside a strip softbox and another behind large diffuser), but you can replace one flashgun with a reflector. Or even shoot with natural light using a nearby window! It's the position that matters – the main light source should be placed behind the scene to backlight the steam, and another should be to one side to fill in the shadows and add some volume.

Of course, this approach is the same whether you're shooting a still-life incorporating steam, as I am, or an environmental image, or even a portrait – backlighting is the key. If you're shooting a still-life, then all you need is a coffee cup,

some hot water and a couple of additional items to make your still-life set-up more interesting. You could go for a Christmas theme with some star-shaped cookies, gingerbread men, garlands, cones, fir branches and decorations, or pick something related to steam and clouds like steam-punk drawings or cloud formation schemes. Also, an incense stick may come in handy for your test shots too.

One last thing before we get started; it seems obvious, but boiled water is hot, so be careful, keep children and pets away from the set and don't forget to put your kettle on a heat-resistant surface.





1 COMPOSITION Arrange your still-life into a simple composition, leaving some space in the frame for the rising steam. Place the cup in the foreground and keep the background behind and above it free from clutter and distractions. If you're struggling to find a pleasing composition then you can't go far wrong by using the rule-of-thirds.



2 FIRST LIGHT Set the first light source behind the scene. If you're using flashguns, you may want to use a snoot or a strip softbox to control the spread of light and emphasise the steam without getting unattractive highlights on the cup. If you're using window light then consider the positioning of your set (as you can't move a window!)



3 SETTINGS If you're using flash then set your shutter speed to match your flash sync speed. For natural light, a slower shutter speed and lower ISO will create a blur within the steam, whereas a fast speed with a higher ISO will capture more texture. Choose a wide to mid-aperture setting for an attractive depth-of-field – I've gone for f/5.6.



4 TESTING Here's a neat trick – rest a lit incense stick on the edge of the cup and take a couple of test shots to make sure that steam will be visible and well-lit. Smoke lasts longer than water vapour, so it's more convenient for the test. If you're using flash then set it to a low power (1/16 to 1/128) for a short duration that will freeze any motion.



5 SECOND LIGHT Depending on the environment, and whether you're using flash or natural light, you may need to add bounce or fill light to your scene. This can take the form of a reflector, a white sheet or, as in my case, a second flashgun set to low power behind a diffuser. I've positioned it in front of the set, to the side, opposite the main light.



6 SHOOTING Set your camera on continuous mode, focus on the cup, pour in some hot water and take a sequence of shots with the rising clouds of steam. Keep the kettle higher than usual so it doesn't creep into the frame – it may splash a bit, but the splashes add interest. Be careful with hot water, especially around electronic equipment.



A CHRISTMAS TALE

Choose the best shot and add some contrast in processing to make steam even more bright and beautiful.

Exposure: 1/160sec at f/5.6 (ISO 160)

COMMON PROBLEMS AND HOW TO HANDLE THEM...



1) SIDE AND FRONT LIGHT

No backlight equals invisible steam. To remedy this, always make sure that your key light, or most prominent light source, is behind the cup.



2) SHADOWS ARE TOO HARSH

Images with high contrast can be beautiful, but if you're not doing it on purpose, try to preserve some shadow detail by using fill light or bounce light.



3) MISFOCUS Taking a sequence of images may confuse the autofocus system, so it's better to focus first, and then lock to manual focus to stop the camera from hunting between shots.



4) OVERSHARPENING Particles of water vapour are larger than smoke particles, so with excessive sharpening during processing they start looking noisy and unattractive. Dial it back a bit!

SHOOTING A TIME-LAPSE

RECORD THE PASSING OF TIME AND WATCH THE WORLD FLY PAST BY SHOOTING A TIME-LAPSE SEQUENCE. JORDAN BUTTERS GUIDES YOU THROUGH THE BASICS OF CAPTURING AND EDITING YOUR FIRST TIME-LAPSE...

NO DOUBT AT some point or another, you'll have been wowed by an amazing time-lapse sequence – the ebb and flow of a city, clouds rolling peacefully above the landscape, a plant growing from a seed to fruition, or even a building being constructed from the ground up! The good news is it's easy to shoot your own time-lapse using your own camera.

Time-lapses, for the most part, are actually shot as stills rather than video, which is then converted into motion. The PAL video standard that we use in the UK is 25 frames per second (NTSC in the USA uses 30fps),

CAMERA: NIKON D750 / **LENS:** AF-S 24-70MM F/2.8GED

so 25 photos will create one second of footage. Shooting stills over video has several advantages – firstly, if you were to shoot hours of HD or 4K video you'd quickly fill up your memory cards! Also, shooting stills rather than video allows even modest DSLRs to capture 4K and above footage, if desired. While you might only want to output in 1080p, this gives you scope when editing to move around the frame, zoom in and out and even crop in and still leave lots of resolution.

A large portion of success here comes from planning. First, decide on your location, and check the direction of light and the weather. Scattered clouds and a medium breeze is ideal. Think about how long you want to be on location, and how long you want your final clip to be too. Finally, you'll need some essential kit – see over the page. There are some incredibly clever and complex techniques you can progress onto, including adding camera motion (turn to page 119 for our test of the Syrp Genie Mini). However, I'm going to tackle a basic time-lapse to ease you into the technique.

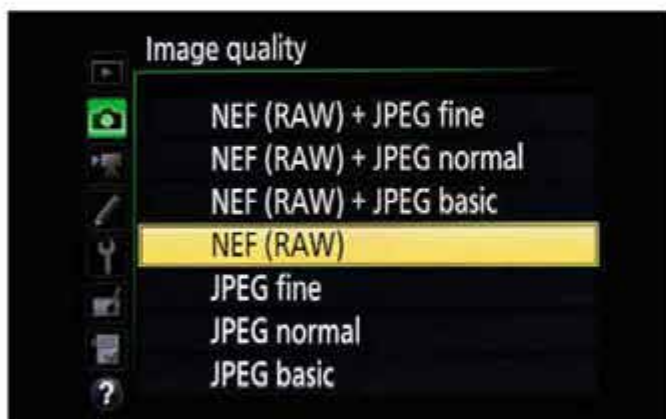




1 FIND COMPOSITION Once you're on location, find your composition. Time-lapses are most effective when there is clear movement or progression of time visible in the scene – think clouds rolling across the sky, shadows moving across the land as the sun moves, traffic building and dispersing or the flow of pedestrians in cities. Consider this when framing your time-lapse sequence. Once happy, lock your camera off on a sturdy tripod and attach your intervalometer.



2 WORK OUT THE INTERVAL To work out the interval (the delay between each shutter release) you need to consider what you're shooting, and how long you want the video to be. Referring to the guide to the right, I'm shooting slow moving clouds, so I'll use an interval of around three seconds. I want 15 seconds of footage so, at the frame rate of 25fps, I'll need 375 frames ($15 \times 25 = 375$). With a three second interval, I'll need to shoot for a total of 1,125 seconds, or 19 minutes.



3 JPEG OR RAW? JPEG offers the advantage of being quick to process, and you can fit more images on your memory card. However I prefer to shoot in Raw, providing I have the memory space to do so. Raw takes more time to work with, but it offers an extra safety net when it comes to White Balance and exposure, plus you can easily sync any changes made to one Raw file over the whole sequence in seconds using Adobe Lightroom, Bridge or Camera Raw.

ESSENTIAL KIT

● **CAMERA:** Any DSLR or mirrorless model will do – as we're shooting stills it doesn't even need to support video! A 12-megapixel sensor is still capable of outputting a 4K time-lapse sequence.

● **LENS:** Use a standard zoom, wide-angle, or telephoto lens. Lenses with manual rather than electronic aperture control are preferred to avoid flickering, but aren't essential.

● **TRIPOD:** A sturdy tripod is important to keep the camera still during the time-lapse. Models with a bag or accessory hook allow you to add ballast to the tripod to hold it steady.

● **INTERVALOMETER:** Some newer cameras have a basic intervalometer built-in, but if not they can be had from eBay and Amazon for under £20. Intervalometers trigger your camera's shutter at programmable intervals.

● **FILTERS:** ND grad filters allow you to balance the exposure, while solid NDs extend the exposure time, adding motion. Dragging the shutter often results in a smoother time-lapse.

QUICK INTERVAL GUIDE

ONE SECOND

- ✔ Clouds during strong breeze
- ✔ Fast moving objects or scenes
- ✔ Moving traffic in cities

1-3 SECONDS

- ✔ Sunrise or sunset
- ✔ Slow moving clouds
- ✔ People moving in a crowd

15-30 SECONDS

- ✔ Shadows moving across the land
- ✔ Sun/moon moving across sky
- ✔ Night sky and stars/Milky Way



4 STAY CONSISTENT Find your exposure by taking a test shot in aperture-priority mode. Use exposure compensation to gain a good exposure, and use ND grad filters to balance the land and sky, if needed. Expose for the scene at its brightest, otherwise your time-lapse may overexpose if the sun suddenly appears. Set your White Balance to match the conditions, clear your memory card(s) of all images and make sure your camera battery has plenty of life in it.

ONE MOMENT IN TIME

This is just one frame – now turn the page to find out how to assemble your own time-lapse, or head to http://bit.do/DSLR_timelapseexample to see the final video.

Exposure: 1/5sec at f/11 (ISO 200)



5 SHOOT Make a note of your settings from the test shot and transfer them into manual exposure mode – this avoids the exposure changing, which could lead to ‘flickering’ (see *Pro Tip*, over the page). Switch to manual focus, program your intervalometer with the interval you calculated and, when ready, press start. The intervalometer will do its thing and you can sit back and enjoy the view. All done? Turn the page to find out how to compile your video.

CHANGES IN LIGHT



SAMUEL BORGES/SHUTTERSTOCK

Shooting day-to-night, or night-to-day time-lapses can be tricky. In these situations, aperture-priority mode is preferred, as you tell the camera the aperture you want and it controls the shutter speed. However this often results in flicker (see *Pro Tip*, page 54). The alternative is shooting in manual mode and changing the shutter speed as the light changes. This results in bigger jumps in exposure, but these can also be fixed during processing, providing you shoot in Raw.

HOW TO ASSEMBLE YOUR TIME-LAPSE

ALL THAT'S LEFT TO DO IS TO COMPILE YOUR FRAMES INTO A VIDEO. LET US RUN YOU THROUGH THE PROCESS USING LIGHTROOM AND LRTIMELAPSE...

THERE ARE MANY different time-lapse applications available, each with different workflows. But, the basic method is always the same – edit your sequence so that every frame follows on from the last, and then compile the sequence into a video. If your sequence looks perfect straight out of camera then simply import the JPEGs into your video editing software as frames. Remember you'll need 25 frames per second, so set the duration of each frame to 0.04 seconds to achieve this.

For this tutorial, I'm going to use Adobe Lightroom and LRTimelapse – a very clever piece of software.

PRO TIP

Flickering is where the exposure changes slightly from one frame to the next. It can be due to metering changes in aperture-priority mode, or by small physical variations in aperture between shots. Flicker is easily removed in processing, if you shoot in Raw, and use the right software.

LRTimelapse is available as a free trial from lrtimelapse.com. The trial is limited to 400 frames, so you'll need to create a folder on your computer and add a maximum of 400 unedited Raw files (don't import them into Lightroom yet). In the full version, you can use unlimited images. The software seems complex at first, but take it slow and follow these steps and you'll get the hang of it.

TIMELAPSE SOFTWARE



LRTIMELAPSE

Price: €119 (free trial) / Windows & OSX
Works alongside Adobe Lightroom to create smooth transitions through your sequence. There's a powerful deflicker tool, and can be used to create day-to-night transitions.



SEQUENCE

Price: USD\$35 (free trial) / OSX

An easy-to-use standalone time-lapse assembler that can read and edit Raw images. Create keyframes, deflicker, and save projects as complete documents to revisit.



TIME LAPSE ASSEMBLER

Price: Free / OSX

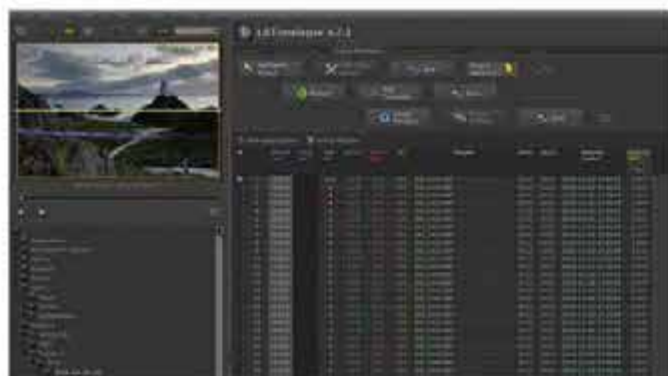
A basic, but free assembler that allows you to import a sequence and export the results as a video. There's no deflicker options, so you'll need to handle that elsewhere.



WINDOWS MOVIE MAKER

Price: Free / Windows

Lacks advanced options, such as deflicker and editing, but you can simply drag and drop your sequence in, set the duration of each image and output the results.



1 LOAD THE SEQUENCE Open LRTimelapse and use the navigator on the left hand side to locate the folder of 400 Raw files that you created (see intro, above). Select it and the Raw files will load, with lots of technical info – don't worry, you don't need to pay any attention to this. The buttons at the top of the window offer a logical workflow for your time-lapse. Make sure that the **Visual Workflow** tab is active.



2 SET KEYFRAMES Click **Keyframes Wizard** and a slider bar will appear, allowing you to select how many keyframes you want to set. Keyframes mark the start and end of a transition, so for simplicity's sake, set the number to '2'. Once done, click the **Save** button – this saves the keyframes into the metadata, ready to load into Adobe Lightroom. Load up Lightroom and make sure the **Library** module is active.



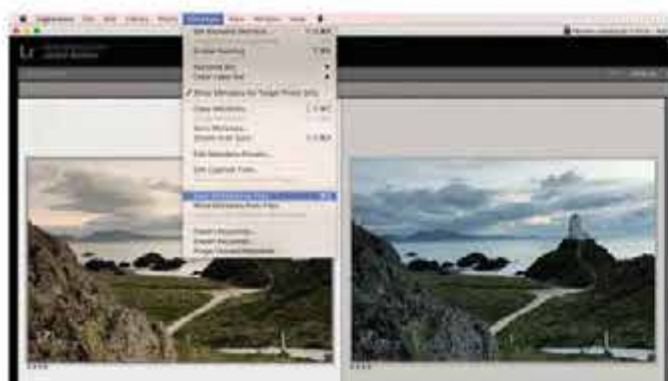
3 IMPORT INTO LIGHTROOM Head back into LRTimelapse, click and hold on the **Drag to Lightroom** button and drag the button and drop it in Lightroom's Library module. The import dialogue will load, so click **Import** to add the images to Lightroom. Once imported, go to **Library > Filter by Preset > 01 LRT4 Keyframes**. You will now have just two frames visible in the Library – these are the keyframes.



4 EDIT THE FIRST FRAME Select the first keyframe, then press **cmd & A** (Mac) or **ctrl & A** (PC) to select all. Press the **D** key to enter the Develop module. Make any edits to your first keyframe, such as exposure, colour, or White Balance. This frame is the first in your sequence, so should represent how you want the time-lapse to look at the start. Once done, press the **G** key to head back to the Library.

TIME WAITS FOR NO MAN

The process takes some getting used to, but LRTimelapse functions perfectly alongside Lightroom to create smooth time-lapse videos.



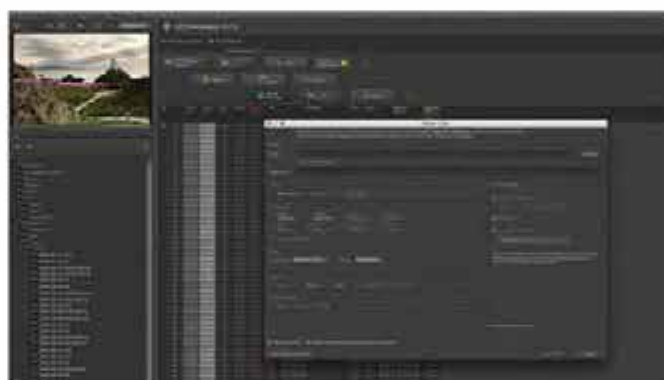
5 EDIT THE FINAL FRAME At the top, click on *Scripts* and select *01 LRTimelapse Sync Keyframes*. Next, select your final keyframe and make any editing adjustments to this too, if required. You are editing the first and last frames of the time-lapse, and the software will create the transition in between. This next part is important – once done, select all again, and then go to *Metadata>Save Metadata to File*.



6 CREATE THE TRANSITION Back in LRTimelapse, click on *Reload*, then *Auto Transition*, and then *Save*. Next, click on *Visual Previews* and the software will compile a preview. This takes time, but once done you can preview your time-lapse. The lines overlaid on your preview represent the changes in exposure. If the video flickers, use the *Visual Deflicker* button to apply deflicker using the slider, before clicking *Save*.



7 EXPORT SEQUENCE In Lightroom, go to *Library>Filter by Present>00 LRT4 Full Sequence*. Then, select all images again (*cmd/ctrl & A*) and go to *Metadata>Read Metadata from File*. Next, go to *File>Export* and, from the presets options to the left, select *LRT (JPG, 4K)*. Make sure that the LRTimelapse executable points to the LRTimelapse app, and select an Output path for your sequence. Click *Export*.



8 RENDER THE VIDEO Lightroom will take some time to export the frames, so sit tight. Once done, an options box will open in LRTimelapse, allowing you to set frames per second, output path for the video and quality. Click *Render* and your video will start processing – keep an eye on the progress bar in the bottom left corner and an audible notification will tell you when it's done. Now enjoy your video!

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The PhotoWorkshop

LOW LIGHT & NIGHT

AS DAY TURNS TO NIGHT, THE URBAN LANDSCAPE IS TRANSFORMED INTO A DAZZLING DISPLAY OF MAN-MADE COLOUR. THE TIME PERIOD YOU GET TO CAPTURE THIS IS BRIEF, HOWEVER, SO TO BAG GREAT IMAGES YOU NEED TO MAKE SURE YOU'RE IN THE RIGHT PLACE AT THE RIGHT TIME AND WORK FAST! TO SHOW HOW IT'S DONE, WE CHALLENGED READER AND ENTHUSIAST PHOTOGRAPHER ED HASLER TO COME UP WITH THREE GREAT SHOTS IN ONE EVENING, AND SENT SEASONED PRO LEE FROST ALONG TO HELP HIM OUT. HERE'S WHAT HAPPENED...



LOW LIGHT AND NIGHT photography is a fascinating genre that encompasses many different subjects and techniques, both indoors and out, in natural or artificial lighting. At one extreme you have exposures lasting hours that capture star trails arcing across the night sky as the Earth rotates on its polar axis. At the other you have portraits shot in the light of a flickering candle. For most of us, though, night photography is about heading out into towns and cities with our cameras and tripods to capture the urban landscape – floodlit buildings, dazzling cityscapes, illuminated signs flashing their vibrant messages, traffic trails on busy roads at rush hour and towering office blocks with thousands of windows glowing against the darkening sky. Even the most mundane town by day takes on a whole new appearance and mood once the sun sets and man-made illumination takes effect. No matter where you live, it's possible to shoot amazing night and low light images.

Success isn't weather-dependent so much either. Heavy rain is a bit of a no-no, though the urban landscape at night after rain can look stunning, as wet surfaces reflect colour from all

around. But cloudy or overcast weather is fine because the sky turns a deep velvety blue as darkness approaches and it looks a million times better than it did a few hours earlier.

The most important factor is getting the timing right. The best night shots aren't really taken at 'night'. Instead, they're taken during the crossover period between day and night, when daylight levels have faded sufficiently to let man-made illumination add its magic touch, but there's still colour in the sky and enough light from the sky to help fill-in the shadows. This period is often referred to as the 'blue hour', although depending on the weather and time of year, you don't always get a full hour of shooting so you need to maximise the time you do have by coming up with a plan of action and working efficiently.

To see just what can be achieved on a single evening, we challenged reader Ed Hasler to produce three cracking low light images in London. It's a tall order to capture three winners, as there isn't a second to spare when darkness is just moments away, so low light expert Lee Frost went along to offer advice and make sure he completed the challenge with flying colours.

OUR EXPERT: *Lee Frost*



Lee is one of the UK's best-known landscape and travel photographers. During a career spanning three decades he has written almost 20 books, 1000's of magazine articles and led more than 150 photo workshops and tours. www.leefrost.co.uk

Lee's kit: Canon EOS 5DS and EOS 5D Mk III, Canon EF 16-35mm f/4L IS USM, EF 24-70mm f/2.8L IS USM, EF 70-300mm f/4.5-5.6L IS USM, Gitzo GT3542LS tripod with Really Right Stuff ball head & F Stop Loka backpack.

OUR READER: *Ed Hasler*



Ed works as a project manager at an investment bank, but when he's not working he loves getting out with his camera. He's been interested in photography ever since he bought a 110 film camera when he was about 12 years old!

Ed's kit: Canon EOS 5DS R, EF 24-70mm f/4L IS USM, EF 70-200mm f/4L IS USM, EF 100-400mm f/4L IS II USM, Gitzo carbon-fibre tripod and Manfrotto 410 geared head & Billingham shoulder bag.



CHALLENGE 1: TWILIGHT

The weather on the day set for Ed to complete his challenges was forecast to offer a mixture of cloud and sunshine, which meant there could be a decent sunset. The sunset time for the day was at 4:20pm, so to maximise Ed's shooting time and give him the chance to make the most of the post-sunset glow, I met him outside Wapping station an hour earlier and we immediately set off to the first location about ten minutes' walk away, by the River Thames near Victoria Dock.

This location was chosen because it offers a fantastic view of Tower Bridge, The Shard and City Hall, three London landmarks. The sun would set to the left of the scene and out of shot, but if there was a colourful sky once the sun went down, that colour should carry over far enough to appear in the shot. Fingers crossed!

On arrival conditions were looking very promising, with plenty of broken cloud drifting across the sky. Better still, Ed and I had the place to ourselves so Ed could choose exactly where he wanted to set up his tripod, and there was at least 40 minutes before sunset, so no need to rush around. Perfect.

Ed got his gear organised and took a few test shots to check the composition. It was then a simple case of waiting for the sun to set and hoping for the best. Frustratingly, the closer we got to sunset, the more the cloud dispersed and by the time the sun dipped below the horizon, there was hardly any cloud left to 'colour-up'.

On the upside, what we were left with was a beautifully clear twilight sky with a rich orange glow near the horizon, fading into magenta higher in the sky, creating a stunning backdrop to the architecture in front of us. I could see from Ed's expression that he knew this shot was going to be a winner, but he was biding his time and waiting for conditions to be spot on. Every few minutes he'd take another shot and examine it on his DSLR's preview screen using a Hoodman loupe, to see how the lighting balance was shaping up. It wasn't long after sunset that we could detect a faint purple glow on Tower Bridge from



1) Light levels are dropping as Ed waits patiently for the right moment. 2) Ed frames his shot, ready to start shooting when the light is just right. 3) A hotshoe spirit level ensures a straight horizon. Looking good on the back of the camera!

floodlights, but there was still too much daylight around for that lighting to show up fully, so we played the waiting game.

Once you enter the crucial 'crossover' period between day and night, it really is a battle against the clock. It would be easy to just stay in one location and keep shooting until dark, but Ed had two more challenges to complete so that wasn't really an option. Equally, if we left this first spot too soon, his shot wouldn't fully do it justice. Ed captured the scene again. Then again. He took single shots in Raw format and also experimented with the in-camera HDR mode of his Canon EOS 5DS R to see if it could capture more detail. No filters were used as they weren't really necessary. An ND grad on the sky wasn't an option because Tower Bridge and The Shard were breaking into the skyline and would have been darkened by the darker area of the grad. However, if you get the timing just right so the natural and manmade lighting is in balance, you don't need grads anyway because the sky will be perfectly



CHALLENGE 1 Pro verdict

"This shot was entirely Ed's work. He suggested the location as he doesn't live far away, and he remained steadfast when it came to waiting until the balance between the fading daylight and the colourful man-made lighting was spot on. That patience paid off – this image is superb! The composition is strong, the colours are wonderful and the final shot has a polished look about it that any pro would be happy with. If you ever wondered what a perfect urban 'night' shot should look like, look no further – it's right here."

exposed along with the rest of the scene.

Ed remained as cool as a cucumber and was determined to nail this shot, even if it meant a mad rush afterwards. I was starting to grow anxious that we'd run out of time, but the scene looked stunning so I fully understood why Ed didn't want to compromise it. Fortunately, by 5:15pm, almost an hour after sunset, Ed nodded that he was happy and we could move on. Go!



THE CROSSOVER POINT

Ed waited patiently for that crucial moment where the ambient and artificial light were balanced.

Exposure: One second at f/11 (ISO 100)

Using High Dynamic Range (HDR)

Although HDR has a reputation for producing horrible images, in sensible hands, HDR can be very useful. The main problem with urban night scenes is the level of contrast you have to deal with, from bright points of light to dark shadows. Shooting when daylight and artificial lighting is in balance will solve the problem as much as you can with a single exposure, but by shooting a series of images at different exposures then merging them, you can achieve even better results.

HDR software has come on a long way in the last few years. HDR Efex Pro is especially good, and can be downloaded for free along with the rest of the Google Nik Collection (www.google.com/nikcollection/). Photomatrix Pro 5 is very popular too and only costs £72 for a full download, although you can try before you buy (www.hdrsoft.com). Don't forget the excellent Merge to HDR option in Adobe Camera Raw (ACR), the Raw processor for Photoshop and Lightroom either.

Some DSLRs have in-camera HDR capability. Ed's Canon EOS 5DSR is one such camera and he made the most of it during our shoot. When set, it takes a series of three images then merges them in-camera. You can choose the exposure parameters of the sequence or select Auto and also choose between different effects, although Natural is by far the best. The final HDR image is saved as a JPEG, but you can elect to keep the three Raw files used for the HDR and merge them later using software – although the in-camera HDR is often more than good enough.





CHALLENGE 2: THE BLUES

With the first shot in the bag, we make a mad dash to the second location. Light levels are fading fast and we only have maybe 20 minutes before the last traces of colour in the sky fade. That's the frustrating thing about night photography – you wait and wait for everything to be perfect, but once it is, you're battling against the clock because peak conditions last for just a few minutes before they start a steady decline towards darkness. Before you know it, it's game over and you're wondering where the day went.

Ed decides to take another shot of Tower Bridge, but this time from the opposite side of the Thames, so we're facing in a more northerly direction where the sky is a deep blue. This is the classic 'blue hour' blue – deep, luscious and smooth, but it's soon to be black so there's no time to waste and we have a bit of a walk ahead of us.

Tower Bridge is closed to traffic while the road is re-surfaced and looks like a building site. Most of it is cordoned off and pedestrians are ushered along narrow walkways. It's rush hour on one of London's



most iconic landmarks, so as well as people heading home after a hard day at the office, we have selfie-shooting tourists to contend with as well. Hundreds of them! Ed and I squeeze through as quickly and politely as we can, considering we're wearing backpacks and carrying tripods, then dash down a flight of steps on to the Thames Path.

There's scaffolding everywhere, but fortunately, Ed finds a spot where he has a clear view of the bridge and sets up his gear as quickly as he can. It's another magnificent scene. The bridge looks resplendent with the towers now well-lit against the night sky. Framed under the towers is the Gherkin,



Experiment with White Balance

Your typical urban night scene contains numerous different light sources – daylight, mercury vapour, sodium vapour, tungsten, fluorescent, etc – and each one creates its own colour cast. More often than not, Auto White Balance (AWB) does a brilliant job of dealing with all those different colour casts, but it's worth experimenting with others too to see if they make much difference. This split-image shows the same scene shot using different in-camera WB settings, though if you shoot in Raw, you can change the White Balance during processing.



1) Ed quickly gets set up and starts shooting as soon as he can, while there's colour in the sky. 2) The temperature's dropping and Ed's dreaming of hot chocolate – but it will have to wait! 3) Contrast increases as the sky darkens – in a few moments it will all be over. 4) The sky's now reached the point of no return – the contrast between sky and highlights is too large.

another fabulous piece of London architecture on the opposite side of the Thames. It's a shame there's no traffic crossing the bridge as the red and white light trails would add even more colour.

There isn't a second to waste. The sky is still fairly bright looking towards where the sun went down, but we're not looking that way because Ed needs to come up with something totally different to the previous shot. It is a challenge, after all!

Ed trips the shutter with his remote release and waits for the exposure to run. Light levels are much lower now so we're talking 20-30 seconds. It seems an age when time is against you, but eventually the shutter closes, an image pops up on the preview screen and it's looking good.

LONDON LANDMARK

The deep, velvet blue sky provides the perfect backdrop for the bridge, with the City framed within.

Exposure: 12 seconds at f/11 (ISO 100)



The camera is picking up more colour in the sky than our eyes can detect, which is great because it buys us a few more minutes before contrast goes through the roof.

Ed's not totally happy with the composition, so he moves a few metres further along the path and straddles the railings on the wall with his tripod legs so his camera overhangs the river a little more. He re-shoots and prefers the shot to the last one. The exposure is a little low so he dials in +1/3 stop of compensation and shoots again.



There are some highlight warnings flashing away on the preview image now, but I tell him not to worry – we're looking at a JPEG on the back of the camera, and once he opens the Raw file on his computer screen those blinkies will probably be gone. If not, no worries – some of the lights in the scene are very bright, so if they come out white it's no big deal; it all adds to the impact of the scene.

Ed keeps shooting, experimenting with different exposures. He also tries his camera's HDR mode again to extend his

CHALLENGE 2 Pro verdict

"Another stunning shot from Ed. Time was against us here. Having spent ages waiting for the light level and balance to be just right at the first location, we then had a rush on our hands at the second. Fortunately, Ed knew exactly where he was going and how he wanted the shot to look, so as soon as we arrived he got on with the task at hand and had the shot in the bag within minutes. A bit of post-production and there you have it – one of the best night shots of Tower Bridge that I've ever seen."

camera's dynamic range and see if he can pull a little more shadow detail out of the scene. It's really a case of trying to make the best of the light we have, knowing that he has a great shot in the bag and the pressure is off. Which is just as well, because within 15 or so minutes of us arriving, the sky is almost black and there's no point shooting the scene any longer.

CHALLENGE 3: INSIDE JOB

On a typical evening you'd be hard-pressed to bag more than a couple of good night shots before the sky fades to black. No matter how well you plan it, there just isn't enough time. Ed did well. Thanks to the clear weather, the sky remained colourful for longer than it would if it had been cloudy. Nevertheless, by the time he completed the second task it was game over. No amount of HDR or Photoshop trickery was going to pull any colour out of that sky – even London light pollution wasn't helping!

The problem was that Ed still had a third and final challenge to complete. Luckily, I'd thought ahead. I knew that there were office buildings over the Thames from near where we were, such as 20 Fenchurch Street (otherwise known as the Walkie-Talkie building), that would make good telephoto subjects – zoom-in, fill the frame with the pattern of hundreds of windows and there's no need to include sky. Job done. I put this to Ed and we started heading along the Thames Path past HMS Belfast until we had a clear view across the river.

En-route, we passed the entrance to Hay's Galleria, an old wharf that's now a trendy development of shops, offices and cafes. The building has a beautiful glass and steel arched roof and as I peered in, I suddenly had a brainwave – why not shoot a low-light interior instead?

Ed nodded in agreement and we wandered in. The tripod police are notorious in London on private property, so there was a very high probability that as soon as Ed started extending the legs of his Gitzo, we'd receive a tap on the shoulder and a polite request to sling our hooks. To our amazement, it didn't happen. There were plenty of people coming and going but security wasn't among them and Ed was able to set up his tripod and camera in full view of everyone without a problem.

I took a few handheld shots with my camera at high ISO to see how the interior looked. I was pleasantly surprised. Ed got to work doing it properly and I suggested he shoot at around 24mm on his full-frame camera. You could easily go wider, but it wasn't necessary. Ed's initial shots looked a little untidy as he included the galleria floor in the composition, so I raised his camera to exclude it and the composition immediately worked better. Doing this also meant that if people were walking through the scene, they wouldn't appear in the shot so Ed could keep shooting.

Once Ed had found the perfect central spot for his tripod, he got straight to work, experimenting with different focal lengths and exposures to find the best compromise. Zooming in compressed perspective a little and enhanced the repetition in the building's design – the columns supporting the roof and the pattern of arched steel beams in the roof itself. Technically it was a relatively straightforward shot to take, and once we realised the tripod police had gone home, Ed could work in a more relaxed way.



1) The first shot – a work in progress but it shows potential. 2) I tweak the composition then explain to Ed what I've done and why. 3) A remote release is invaluable for night and low-light photography. 4) Ed in action, trying to look as discreet as a man carrying a large camera and tripod can!

CHALLENGE 3 Pro verdict

"What a great way to end the workshop. Ed has done a brilliant job yet again and produced an image for which he should be proud. We were lucky at this location that it wasn't too busy with people and that security didn't make us pack up and leave. Initially, Ed was shooting wideviews of the galleria, but I prefer this version. The composition is nice and tight and really emphasises the repetition in the design of the interior. The verticals are also well-corrected, the exposure is spot on and the warmth from the interior lighting adds a nice mood to the image."

Deciding to shoot indoors for the final challenge rather than outside proved to be a wise move for several reasons. Not only did it add a totally different shot to the set, and proved that even when the sky has lost its colour for the night, there are still great photographs out there, but the temperature inside the galleria was about 10°C higher than outside! Most important of all, just out of shot was a Costa coffee shop, and the smell of freshly-ground coffee eventually proved just too hard to resist!

WORKSHOP SUMMARY: Ed Hasler



"Tower Bridge is one of my favourite locations to photograph as it's just on my doorstep, and also a fantastic subject to shoot. I've known Lee for over ten years, having been on a number of his

photography tours, and was eager to see his take on a subject I thought I knew very well. Lee had encouraged me to plan ahead, and I had come up with a list of locations that would make the most of the light. At the first location, the light was changing constantly as the sun dipped below the horizon, and then as the sky turned darker, we rushed over to Tower Bridge to the second location to catch the last of the light in the sky. We just made it, and minutes later the sky was too dark, which highlighted the importance of selecting a location in advance, and planning when to be there."

THE GOLDEN ARCHES

The illumination after dark transforms the interior of the galleria, making it a great little low-light discovery!

Exposure: Two seconds at f/11 (ISO 100)



Expert Critique

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HOW TO SUBMIT IMAGES



FLORENCE CATHEDRAL

by Peter Sampson

Nikon D5100 with AF-S16-85mm f/3.5-5.6G lens.
Exposures: Eight, 15, & 30 seconds at f/16 (ISO 100).

What we think: This is a tricky location to photograph. Il Duomo di Firenze is tightly hemmed in on almost all sides by the city, and it's always very busy too. We like the composition here, showing the scale of the cathedral next to the surrounding buildings. Peter tells us he took three exposures to capture the full dynamic range – the HDR effect has been handled sensitively and the motion in the crowd adds interest to the foreground. Watch out for duplicity in the crowd – some people appear twice and this gives away the multiple exposure effect.

Why it works

- ✓ Interesting composition
- ✓ HDR handled well
- ✓ Crowd motion adds interest

JON HICKS





TRAVEL EXPERT *Jon Hicks*



"Being a fan of architectural photography and long exposures, Peter's shot of Florence's beautiful Duomo should be right up my alley.

Well, it very nearly is: the exposure's been nicely controlled in the upper half of the image and the cathedral's dome sits comfortably between the tower on the left and buildings on the right. It's quite dark along the bottom, however, with the figures almost disappearing into the murk; an easy fix with a Curves adjustment layer in Photoshop, but maybe waiting a little longer to shoot at twilight when the lights came on would've been better. And I'd definitely take out the man in the white shirt who appears twice. From experience, the cathedral is best shot from a distance and a short walk across the Arno, followed by a steep climb, is rewarded with stunning city views from Piazzale Michelangelo. An awesome viewpoint, not only for the Duomo but the whole of Florence."



GEISHA WITH SWORD

by Pete Clare

Nikon D610 with AF-S24-70mm f/2.8G lens.
Exposures: 1/125sec at f/8 (ISO 100).

What we think: Colour can transform an image, and flash gels are a great way to add creative colour to an image. Pete's overall use of light is good – the central key light is neutral, with the contrasting red and blue lights adding edge highlights. However, we feel that the story behind the image needs more consideration. Why are the colours there? Are those police sirens? It doesn't seem to all fit together. The subject is interesting already – the tattoos, sword and exotic appearance secure your attention. Add in the coloured lights and there's a lot going on. Maybe a low key lighting set-up would work better? With intriguing shadows adding to the mystery. We've mocked up a quick black & white version to the right in Photoshop to demonstrate.

EDITED





CRASHING WAVES

by Sandy Dee

Canon EOS 5D Mk II with EF 24-70mm f/2.8L II USM lens.
Exposure: 1/160sec at f/8 (ISO 200).

What we think: This is a dramatic portrait! In turning her subject's head towards the flash, Sandy has ensured a good exposure on her face. The image is very high contrast, and the light is biased heavily towards the flash, but this is down to personal taste and may have been the look Sandy was going for. We'd have liked a bit less contrast. The black dress isn't helping, but to reduce subject contrast, Sandy could have moved the light around to the front more, used a larger light source, or simply moved the light source closer, so the light 'wrapped' around more.

Why it works

- 1) Underexposed ambient adds drama
- 2) Dramatic location
- 3) Pose ensures good exposure on face



PASSION

by Frances Tsai

Panasonic Lumix GH4 with Voigtlander Nokton 17.5mm f/0.95 lens.
Exposure: 1/10sec at f/0.95 (ISO 400).

What we think: The Voigtlander 17.5mm f/0.95 is an incredibly fast lens for Micro Four Thirds users – people call it the bokeh machine! Well done Frances for actually getting anything in focus at f/0.95! While a shallow depth-of-field is attractive, and this image is nice enough, there are still areas where more attention could have been paid to. The rose is positioned on the intersection of thirds, but there's little else going on. A closer crop, and a more central composition would be stronger, we feel. Finally, most lenses are slightly soft wide open, and this is no different. Stopping down a stop or so would improve image quality and sharpness, and not lessen bokeh too much. Let's see what Ross thinks...



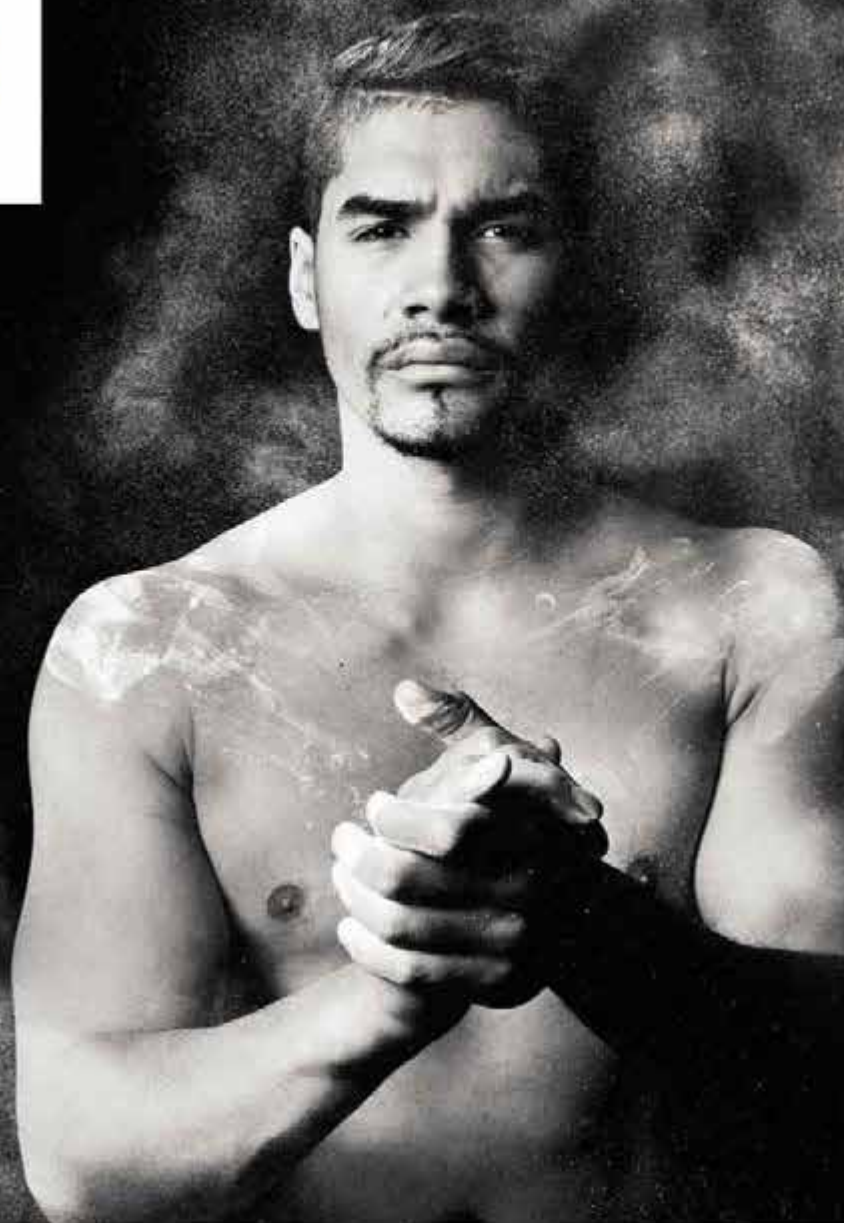
ROSS HODDINOTT



CLOSE-UP EXPERT *Ross Hoddinott*



"This is really quite a lovely shot. Frances has taken advantage of the Voigtlander's unusually large $f/0.95$ aperture to create an image with a lovely soft and romantic quality. The wonderfully diffused background really helps the rose pop from its surroundings, and I love the way the petals begin drifting away into soft focus almost immediately – this is a good, creative use of a shallow depth-of-field and Frances's focusing is spot on too. Looking at the image with a critical eye, I'd question the benefit of including the leaves in the bottom right corner – to my eye, they needlessly add a distraction to the composition rather than contributing to the image. In this instance, a tighter crop would be the solution. From a technical viewpoint, there are a few slightly bright highlights on some of the rose's petals. Maybe a tiny bit more light diffusion would have helped keep them under control. All in all, a beautiful image, though. Top stuff, Frances."



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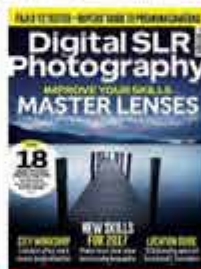
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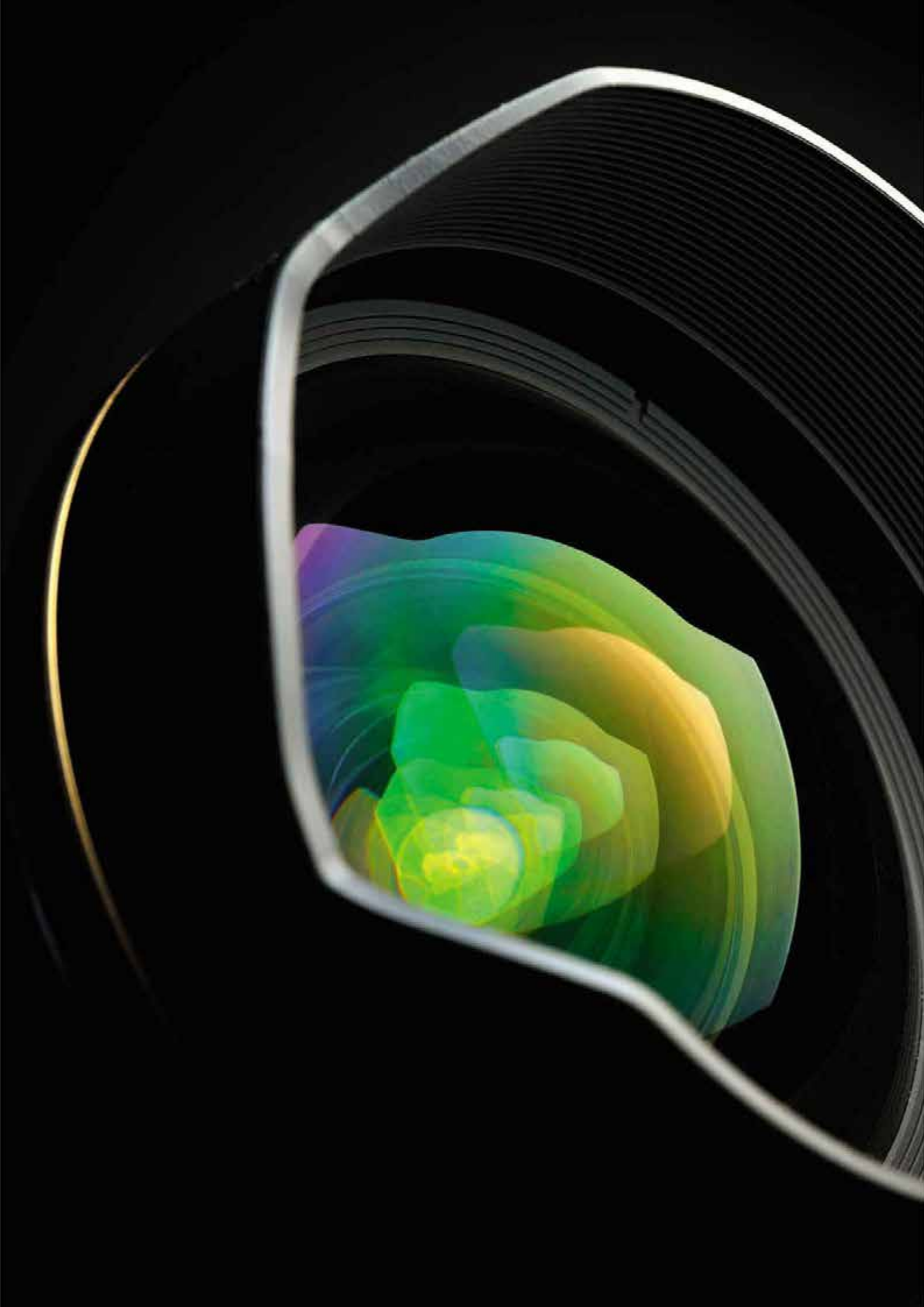
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LENSES

CHOOSING A CAMERA IS AN IMPORTANT DECISION FOR EVERY PHOTOGRAPHER, BUT SELECTING THE BEST TYPES OF LENSES TO USE WITH IT IS EVEN MORE IMPORTANT. THIS MONTH'S GUIDE COVERS ALL THE KEY TYPES OF OPTICS AVAILABLE FOR DSLRS AND MIRRORLESS MODELS TO HELP YOU SELECT THE PERFECT OUTFIT

Words: DANIEL LEZANO

HOW MANY LENSES do you currently own? If you're new to photography the answer is probably two or less – the standard 'kit' zoom that came with your camera and a budget telezoom that allows you to fill the frame with more distant subjects. That's a good outfit to begin your journey into photography, offering a versatile range of focal lengths that can handle a good scope of topics, but once you've been taking pictures for a few months, you'll probably find you soon want to add to your options.

If you're using one of the major camera brands, you'll discover an extensive number of compatible lenses. As well as the branded optics, there are several independent names that offer alternatives too, usually at lower prices than the marque lenses. So whether

you're a wildlife fanatic looking for a powerful telephoto, a landscape lover on the hunt for the best wide-angle or a close-up fan wanting a dedicated macro, there are lenses for you.

Having this choice is great news in the sense that whatever area of photography pulls your strings, there are a number of suitable lenses available that will help you improve your photography. However, it also means that picking the most suitable is made all the more difficult due to the sheer number of options.

In this month's *Beginner's Guide*, we'll help you plan your next lens purchase or two by providing you with all the essential information you need on the main types of lenses, along with what we consider are some of the best options in each class. Read on, and prepare to add to your arsenal of optics.

INTRODUCTION TO LENSES

DO YOU KNOW YOUR ULTRA-WIDE ANGLES FROM YOUR SUPER-TELEPHOTOS? HERE ARE THE MAIN TYPES OF LENSES AVAILABLE FOR YOUR DIGITAL CAMERA

THE LENS YOU use on your camera determines how the scene in front of you will be recorded. Therefore it's essential that you understand the various types that are available and the distinct characteristics of each type of optic.

The key factor that will determine which lens will be the next to add to your outfit is the type of subjects you shoot. If landscapes are your thing, you'll most likely be looking at wide-angles, if you prefer portraits a short telephoto is most apt, while if you enjoy a variety of different subjects it may be that you need to invest in a couple of zooms, or alternatively a far-reaching superzoom.

Whichever type of lens you decide to go for, you'll find several options available with very different price tags. There will be plenty of budget lenses that represent good value, mid-range models with better quality optics and premium lenses with superior glass, build quality and AF performance. On this page we cover the main classes of lenses, which cover the majority of types available. There are some other, more specialist and unusual options, which we'll be covering further on in the guide.

MAIN CLASSES OF LENSES

Lenses are generally classed according to the focal length, or range of focal lengths that they cover. Studies show that the human eye has a cone of visual attention of around 55°. This is the equivalent of a 43mm lens on a full-frame camera, so lenses at around 50mm (32mm on APS-C) are classed as 'standard' lenses. Meanwhile, those with a wider angle-of-view are typically classed as wide-angles and those with a narrower field-of-view are known as telephotos. Some zooms, such as the 18-55mm or 24-105mm have a range that cover all of these focal lengths.



1) WIDE-ANGLES This is the lens of choice when you want to include as much of the scene as possible. Anything from around 24mm to 35mm (or 15-24mm on APS-C) is considered a moderate wide-angle, while wider focal lengths are classed as ultra wide-angle. Go even more extreme and you'll start to see lenses referred to as 'fisheye', which distort reality, offering a typical field of view of between 100 to 180°!

2) TELEPHOTOS When you want to isolate a small area of the scene, or fill the frame with a subject, a telephoto lens, either zoom or prime, is the lens for you. Telezooms come in various focal lengths from the popular 70-300mm (or 50-150mm on APS-C) to super-telephoto lenses over 400mm (over 250mm on APS-C). Prime telephotos are available too, with fast, powerful professional super-telephoto primes being some of the most expensive. Price tags for these resemble those of a small family car!

Q&A: LENSES



Q What are the major differences between budget and premium lenses?

The key difference is the optics – more expensive lenses usually have a more complex design with better quality glass and a wider maximum aperture. Build quality is better too and the AF is often faster. With lenses, you usually get what you pay for, so always buy the best you can afford.

Q Should I buy a prime or zoom lens?

There's no easy answer. Primes are usually smaller, faster and better quality than zooms, but the latter offers the convenience of several focal lengths. If you're happy changing lenses regularly, opt for primes, otherwise start with a couple of zooms covering the popular focal lengths.

Q Can I use one lens fitting on several different brands of camera?

Rarely. Every brand has its own lens mount, so they're not universally compatible. However, Olympus and Panasonic's mirrorless systems use the same mount, so you can swap between their lenses. You can find unbranded mounts on eBay that allow you to swap lenses between systems, but most limit lens features so you may find you lose AF and/or control of the aperture.

Q Are independent lenses any good or should I stick to the marque brands?

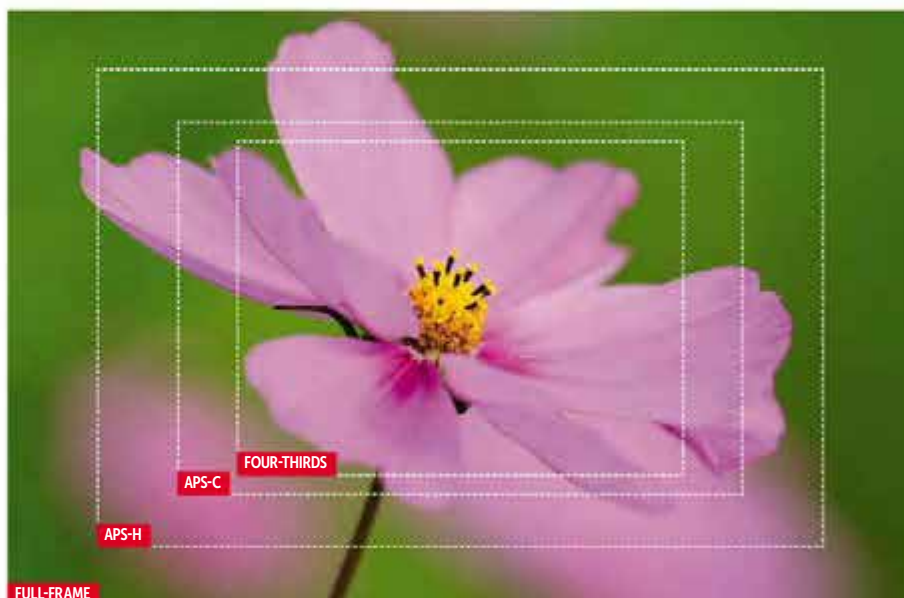
Independent brands like Sigma, Samyang and Tamron produce great lenses, so you should consider them. They're often more affordable and unless you're critical it's hard to notice any major differences in quality. Most now manufacture lenses with premium optics that match or even better the performance of marque lenses – Sigma's Art lenses being one example.

THE CROP FACTOR

This image (right) shows how a scene is captured using the same focal length on cameras with different sensor sizes. As you can see, the smaller the sensor, the more the image is 'cropped'. While this is good news for telephoto users who effectively gain extra pulling power, it's not such good news for wide-angle lovers, as the field of view is restricted, so less of the scene is included.

DIGITAL-ONLY LENSES

When you're buying a lens, you need to check to see if it's compatible with your camera. Some lenses are designed for use with full-frame and APS-C sensors, such as Canon EF, Nikon FX, Sigma DC and Tamron Di lenses. However, some are designed specifically for APS-C, such as Canon EF-S, Nikon DX, Sigma DG and Tamron Di II lenses.



ROSS HODDINOTT

EFFECTIVE FOCAL LENGTHS

WHEN IS A 50mm lens not a 50mm? When you fit it to a camera with an APS-C or smaller sensor. One of the most confusing aspects of lenses is how the effective focal length of a lens depends on the camera it's used on. The focal length stated on lenses relates back to 35mm SLRs, which produced images the same size as today's full-frame sensors (36x24mm). So when you use a full-frame camera, the stated focal length on your lens is accurate. However, when lenses are fitted to cameras with smaller sensors, the effective focal length is increased. Because this results in you effectively cropping out the edges of the full-frame image to magnify the central area, it has led to smaller than full-frame sensors being termed cropped-sensors, while the change in focal length is known as the crop factor. This can be initially confusing but once you know the crop factor of your camera's sensor, you simply need to apply it to each lens to get the effective focal length. Our tables below show the crop factors of the major DSLR and mirrorless brands for easy reference (below right), as well as examples of how these crop factors affect the effective focal lengths of popular lenses (below).

Right: The increase in effective focal length of smaller sensors is ideal when you're using telephoto lenses. **Inset right:** If you predominantly shoot landscapes, opt for full-frame cameras.



Focal length on lens	Sensor size			
	Full-frame	APS-C (all brands except Canon)	APS-C (Canon)	Four-Thirds & Micro Four-Thirds
	1x	1.5x	1.6x	2x
14mm	14mm	21mm	22mm	28mm
20mm	20mm	30mm	32mm	40mm
24mm	24mm	36mm	38mm	48mm
28mm	28mm	42mm	45mm	56mm
50mm	50mm	75mm	80mm	100mm
85mm	85mm	127mm	136mm	170mm
100mm	100mm	150mm	160mm	200mm
300mm	300mm	450mm	480mm	600mm
500mm	500mm	750mm	800mm	1000mm
10-22mm	10-22mm	15-33mm	16-35mm	20-44mm
11-18mm	11-18mm	16-27mm	18-29mm	22-36mm
12-24mm	12-24mm	18-36mm	19-38mm	24-48mm
16-35mm	16-35mm	24-53mm	26-56mm	32-70mm
17-35mm	17-35mm	25-53mm	27-56mm	34-70mm
17-40mm	17-40mm	25-60mm	27-64mm	34-80mm
18-55mm	18-55mm	27-82mm	29-88mm	36-110mm
18-200mm	18-200mm	27-300mm	29-320mm	36-400mm
18-270mm	18-270mm	27-405mm	29-432mm	36-540mm
24-105mm	24-105mm	36-157mm	38-168mm	48-210mm
28-70mm	28-70mm	42-105mm	45-112mm	56-140mm
28-300mm	28-300mm	42-450mm	45-480mm	56-600mm
55-200mm	55-200mm	82-300mm	88-320mm	110-400mm
70-300mm	70-300mm	105-450mm	112-480mm	140-600mm
100-400mm	100-400mm	150-600mm	160-600mm	200-800mm
150-600mm	150-600mm	225-900mm	240-960mm	300-1200mm



ROSS HODDINOTT

Camera brand/models	Multiplication factor
Canon	
All EOS models (except below)	1.6x
EOS-1D series	1.3x
EOS 5D, EOS-1DS & EOS-1D X series	1x
Fujifilm	
X-series APS-C mirrorless models	1.5x
Nikon	
All FX-format D-series DSLRs	1x
All DX-format D-series DSLRs	1.5x
All CX-format 1-series mirrorless	2.7x
Olympus & Panasonic	
All mirrorless models	2x
Pentax	
All K-series models (except below)	1.5x
K-1	1x
Sony	
Alpha/NEX full-frame	1x
Alpha/NEX APS-C	1.5x

LENS ATTRIBUTES AND CHARACTERISTICS

EACH TYPE OF LENS CAPTURES THE SCENE DIFFERENTLY. KNOWING HOW THEY WORK WILL HELP IMPROVE YOUR PHOTOS

WITH SO MANY different types of lenses available, it's easy to wonder how differently each records the subject. From the amount of distortion through to how perspective is exaggerated or conversely compressed, each lens has its virtues. Let's take a look at some of the key characteristics of different types of lenses to give you a better idea of how the same scene can appear when you switch from one focal length to another.

COMMON CHARACTERISTICS

● **CONVERGING VERTICALS:** Photograph buildings from the ground and they appear to lean backwards, with the verticals converging towards each other. Avoid this by shooting from a higher vantage point, using a specialist tilt-shift lens, or correcting the issue in editing software.

● **EXAGGERATED FACIAL FEATURES:** Get close to a subject using a very wide-angle lens and faces distort and features are exaggerated. Try it to capture wacky portraits of family, friends and pets!

● **PERSPECTIVE STACKING:** While wide-angles exaggerate perspective, telephoto lenses have the opposite effect and compress perspective. When shooting distant subjects such as rolling hills or buildings, using a telephoto lens makes them appear closer to each other than they really are – known as stacking or perspective compression.



Lenses come in a variety of sizes and focal lengths and capture the world in very different ways.

ANGLE-OF-VIEW

When we talk about wide-angles including a lot of the scene and telephotos isolating parts of the view in front of you, we usually talk about focal length, as it's a universal term that's easy to understand. What we're touching on when we do this is the angle-of-view that a lens covers.

The angle-of-view is usually stated in degrees and relates directly to how much of the scene the lens captures. The 50mm lens (or an approx 32mm lens on APS-C), with its 40° angle-of-view, is generally considered the closest to the human eye. To show the difference that focal length has on an image and scene, the series of images here were all taken from the exact same location using a full-frame DSLR, and give a clear idea of the angle-of-views at various focal lengths. Notice not only how much the angle-of-view changes, but also how the perspective alters too. Try it yourself!

8MM (FISH-EYE)



15MM



35MM



70MM



200MM



300MM



600MM



PERSPECTIVE

Your choice of lens has a major effect on perspective and this, in turn, affects how your subject and background relate. So when you've the chance to shoot a subject against a backdrop, you should think about how they best work together. If you use a wide-angle lens, you can strengthen perspective and add depth, as well as include more of the surroundings. Use a longer focal length and you tighten perspective, compressing the scene so it has less perceived depth.

It's easy to see this for yourself by taking a series of images at a variety of focal lengths of a static subject set within a scene. Shoot from wide to telephoto, moving backwards every time you use a longer focal to keep the subject roughly the same size in the frame. You'll notice a dramatic change in perspective at different focal lengths when you review the images. Our series here shows the effect of shooting from 8mm through to 400mm.



COMMON PROBLEMS ASSOCIATED WITH OPTICS

● **DISTORTION:** Straight lines that appear curved in your images have been subject to distortion. This is most prominent in wide-angles but can occur with telephotos too. Barrel distortion makes lines bow outwards, while pincushion distortion has the opposite effect. Aspherical lens elements help reduce distortion, while editing software can also minimise it.

● **FLARE:** If parts of your image have streaks of light or hotspots, then it's due to flare. This problem occurs when stray light from the sun bounces around the lens optics, reducing contrast and overall image quality. Using a lens hood, shielding the lens with your hand or shifting your shooting position are the easiest ways of avoiding the problem.

● **CHROMATIC ABERRATION:** Ever noticed slight bands of colour along sharp edges on subjects like buildings or branches? This fringing is due to different wavelengths of light focusing at various points. Premium optics such as apochromatic elements help minimise the problem. Editing software such as Lightroom can also be used to fix it.



BJORN THOMASSEN

WIDE-ANGLE LENSES

ARE YOU LOOKING TO FIT AS MUCH OF THE SCENE IN FRONT OF YOU AS POSSIBLE INTO THE IMAGE? THEN WHAT YOU NEED IS TO USE A WIDE-ANGLE OR ULTRA WIDE-ANGLE LENS

WHEN IT COMES to including vast vistas, or shooting in confined spaces like an interior, no optic can match the field-of-view that a wide-angle lens captures. If you don't currently own one, then it's definitely one to add to the shortlist.

Wide-angles come in a number of forms (see opposite) and have several common characteristics. The smaller the focal length, the wider its field-of-view and the more of the scene you can include. Along with its wide field-of-view, another key characteristic of wide-angles is how they stretch perspective, making areas close to the camera appear wider than they really are and making distant subjects appear smaller and further away. It's no surprise then that this type of lens is coveted amongst landscape photographers, who can use it to help make the most of foreground interest, add depth to the scene and use compositional factors like lead-in lines to guide the viewer through the frame.

One other factor makes them prized optics – their perceived extensive depth-of-field. Even at fairly wide apertures, these lenses produce a deep area of sharpness and closed down to f/13 or f/16, it's possible to have the entire scene appear sharp.

TOP TIP

TAKE CARE WITH FILTERS

The wide field-of-view of wide-angles means that if you're not careful, you may include the filter holder in the edges of the frame – a problem known as vignetting. It's more likely the wider the focal length, so take care and keep an eye on the corners of your frame when using filters.

LEE FROST



Wide vistas: Wide-angle optics are a staple favourite with most landscape photographers.

MY FAVOURITE LENS...



Mark Bauer
Landscapes

"If I'm going out shooting landscapes, the first lens I pack is a wide-angle zoom. Not only do these lenses allow you to capture wide, sweeping vistas, but they also enable you to get in close to foreground interest to create dramatic perspectives. These days, I seem to be shooting more and more with my Fujifilm X-Pro 2. With its traditional controls, it's fun to shoot with and more importantly, it delivers excellent image quality. Most of the time, it's paired with the Fujinon XF 10-24mm f/4. This is equivalent to 15-36mm on a full-frame camera – perfect for landscapes. I love the feel and handling of this lens – it has an old-fashioned aperture ring, which is something I've missed on modern lenses. But more importantly, its optical quality is superb – very sharp throughout the range, with excellent contrast and colour. It's without doubt my current favourite wide-angle."

OUR FAVOURITE WIDE-ANGLE LENSES



SAMYANG 14MM
F/2.8 IF UMC **£300**

Designed for use with full-frame and APS-C sensors, this fast, manual focus ultra-wide prime delivers great quality thanks to its use of premium glass. It is available in Canon and Nikon fittings at a very reasonable price.



SIGMA 10-20MM
F/3.5 EX DC HSM **£330**

Designed for use with APS-C sensors, this Sigma is one of the best budget ultra-wide zooms available, with a constant f/3.5 maximum aperture and excellent optics. It comes in Canon, Nikon and Sony fittings.



TOKINA 11-16MM
F/2.8 AT-X PRO DX II **£480**

Designed for APS-C Canon and Nikon DSLRs, this is a premium ultra-wide zoom at an attractive price. Its focal range is shorter than most, but the fast maximum aperture and premium optics make it a great lens to use.



SIGMA 12-24MM
F/4.5-5.6 DG HSM II **£530**

If you use a full-frame Canon or Nikon and want a reasonably affordable and far-reaching ultra-wide zoom, then this is a fantastic option. You'll be amazed at the dramatic effects shooting at the widest focal length gives.

TYPES OF WIDE-ANGLE LENS

IF YOU'RE LOOKING for a wide-angle lens, there are two types designed for most popular forms of photography and one with more specialist applications.

● ULTRAWIDE-ANGLE ZOOM

This is the most popular type of wide-angle lens with amateurs and enthusiasts, while premium versions are increasingly popular with professionals. Covering an extensive range of wide-angle focal lengths, the ultra-wide zoom is an incredibly versatile lens – shoot at either end of the zoom range and you'll see how dramatic its range is. There are two main types of ultra-wide zoom, the more moderate models covering around 16–35mm are designed for full-frame cameras, as on APS-C it's equivalent to a 24–53mm. APS-C users will want to check out focal lengths like the 10–22mm, which gives an effective focal range of around 15–33mm.

● PRIME WIDE-ANGLE LENS

With ultra wide-angle zooms being so versatile, you may be wondering why you should consider a prime lens? Well, there are several reasons why. They're smaller and lighter, making them good options for travel, while offering a faster maximum aperture that gives them an advantage when shooting in low light. Their simpler optical design means they're sharper too, so if optical quality is paramount, they are the best choice. If you use full-frame, a 20mm or 24mm should be suitable, or a 14mm if you need extreme coverage. APS-C users could consider a 14mm or 20mm, or a 24mm for a more moderate effect and general use.

● FISHEYE LENS

If you need the widest possible coverage, then you'll want a fisheye. There are two types of these specialised wide-angle lenses – circular and full-frame fisheyes. Circular fisheyes are designed for full-frame and give a 180° angle-of-view, capturing a circular image with the rest of the frame pure black. A full-frame fisheye has a similar angle-of-view but fills the frame for incredibly wide vistas. If you fancy trying a fisheye, we'd suggest hiring one rather than buying it, as you'll find you rarely use it.



ROBERTO CALCINO/SHUTTERSTOCK

Wheelie good: Couple an ultra-wide lens with a low angle for dynamic images that stand out.

WHAT TO SHOOT WITH WIDE-ANGLES..



ROSHODDINOTT

● **LANDSCAPES:** If you enjoy shooting scenics then you need a good wide-angle lens. We'd suggest an ultra-wide as your first option as it offers so many useful focal lengths to try out. Once you've gained experience, if you may find you use a particular focal length more than others, you may want to invest in a prime.



ALESSANDRO COLLE/SHUTTERSTOCK

● **ARCHITECTURE:** Whether you're shooting the exterior of buildings or working within the confines of an interior, a wide-angle lens is a good option. An ultra wide-angle zoom is your best option as you'll find the more moderate focal lengths useful when shooting outside, while indoors, the wider the better!



GABRIEL GEORGESCU/SHUTTERSTOCK

● **SPECIALIST PORTRAITS:** A wide-angle is ideal when photographing a person in their home or working setting to capture an environmental portrait. You'll also find the way these lenses alter perspective makes them worth using close to your subject to capture very unusual portraits with exaggerated facial features.

TELEPHOTO LENSES

A TELEPHOTO LENS COMES INTO ITS OWN WHEN YOU'RE TRYING TO MAKE A DISTANT SUBJECT APPEAR AS LARGE AS POSSIBLE IN THE FRAME

ANY FOCAL LENGTH of around 50mm and longer is usually classed as a telephoto, although many people tend to associate the term with big zoom lenses that can see off into the distance, rather than your 50mm primes. Telephotos are best known for filling the frame with distant subjects like animals or sporting action, but they have a wider use too, and are used in everything from portraits to architecture to even landscapes, making them one of the most versatile and popular types of lenses.

How much a telephoto magnifies the subject is directly related to its focal length. A 200mm will be twice as powerful than a 100mm, and a 400mm is four times as strong. While the primary use of telephotos is to make a distant subject bigger in the frame, its narrow field-of-view means it can be used to isolate parts of a scene, such as a particular building in an urban landscape.

The telephoto is a favourite lens with portrait photographers not just because they allow for tight compositions, but they tend to be more flattering than wide-angles, and at wider apertures they produce a very shallow depth-of-field, which is used to create captivating results. The longer the focal length, the shallower depth-of-field appears at the same aperture, so a 300mm lens at f/5.6 will offer less apparent depth-of-field than a 150mm at f/5.6.

You need to use a telephoto lens with care to ensure sharp results – poor focusing and

Deer hunter: Long telephoto lenses are popular with wildlife photographers when stalking timid or flighty subjects.

camera shake can be issues. The latter can be minimised by using the lens's stabilisation system if it has one (many do), and ensuring the shutter speed is reciprocal of the focal length (if using a lens at 200mm, the shutter speed needs to be at least 1/200sec). As for focusing, the key is to focus on the key area in the frame (for example, the subject's eyes) and ensure neither you nor the subject moves before firing the shutter.

There are four main types of telephoto lens and these are covered on the page opposite, along with some of the types of subject that they are best suited for.

BEN HALL



BUDGET BOOST

If you have a decent telephoto lens or zoom but wish at times that you could extend its reach further, then a cost-effective option is a teleconverter. This attachment fits between your camera and the rear element of your lens, and boosts the focal length by 1.4x or 2x. So, on a 70-200mm, the focal length effectively becomes a 98-280mm or 140-400mm, respectively. There are some drawbacks – you lose a stop or two of light depending on whether you use a 1.4x or 2x version, and with slower lenses you may lose autofocus. Image quality reduces, although more expensive teleconverters minimise this.

MY FAVOURITE LENS...



Ben Hall
Wildlife

"The Canon EF 100-400mm f/4.5-5.6L IS USM was the first 'L' series lens that I bought, in 2002 just after I turned professional. It's my most used lens and many of my best-selling images have been taken with it. It's relatively lightweight considering its versatile range and, while its AF isn't the quickest, it's still my preferred workhorse. I believe this lens helped to shape the way I take images, allowing me to frame subjects within the environment, and in doing so produce more compelling images that help tell a story. I've always been a firm believer in travelling light and it's the perfect lens for packing for a day's wildlife photography. It's much easier to cover ground with just one camera and one lens, and is still one of my preferred choices today, especially when stalking a weary subject! There is a MkII available but while the original continues to excel, I'm happy to keep using it."

OUR FAVOURITE TELEPHOTOS



SIGMA 70-200MM
F/2.8 EX DG OS HSM **£730**

The latest generation of Sigma's fast telezoom has it all – premium optics, excellent Optical Stabilisation, fast HyperSonic Motor and a very attractive price tag. It's great alternative to marque lenses.



TAMRON 70-300MM
F/4-5.6 SP Di VC **£300**

This popular zoom lens boasts a versatile range of focal lengths. Image quality is high thanks to the use of premium glass optics and it boasts fast Ultrasonic Silent Drive autofocus. A great general-purpose telezoom.



SIGMA 50-500MM
F/4.5-6.3 OS HSM **£850**

The latest version of Sigma's popular zoom adds an Optical Stabiliser to the fast, quiet Hypersonic Motor focus and impressive premium optics. Compatible with Sigma's excellent 1.4x and 2x converters.



TAMRON 150-600MM
F/4-6.3 Di VC **£830**

This is a popular choice for wildlife, due to its excellent range of telephoto focal lengths. Used on an APS-C DSLR, it offers a staggering range of around 225-900mm! It boasts great optics plus an excellent stabilisation facility.

TYPES OF TELEPHOTO LENS

VLADIMIR ARNDT/SHUTTERSTOCK

THERE ARE FOUR main types of telephoto lens, each with their own pros and cons, so be sure you opt for the type that best suits your photography and subject.

● SHORT PRIME TELEPHOTO

There are a number of prime lenses with a short telephoto range and fast maximum aperture that, while specialised, are more useful than you might first think. The 50mm f/1.8 or f/1.4 is a small and light lens that's a good general purpose prime, suitable for street, travel and portrait photography. The 85mm f/1.8 or f/1.4 and 135mm f/2 or f/2.8 lens are both designed specifically for portraits and deliver excellent sharpness.

● LONG PRIME TELEPHOTO

Amongst the biggest, heaviest and most expensive lenses are the long prime telephoto and super-telephoto lenses, such as the 300mm f/2.8 and 500mm f/4. Designed with the sports and wildlife professional (and wealthy enthusiast) in mind, they boast very fast apertures and extreme pulling power. To achieve this tricky combination requires big, heavy and advanced pieces of glass that cost a small fortune. Best start saving now!

● GENERAL-PURPOSE TELEZOOM

This is the most popular type of telezoom and is available in budget and premium versions. For budget zooms, APS-C users tend to go for the 50-200mm while for full-frame it's the 70-300mm. Those looking for premium optics have fast f/2.8 zooms on offer. The 70-200mm f/2.8 is the most popular type, can be used with both APS-C and full-frame, and delivers quality that's good enough for the pros.

● SUPER-TELEPHOTO ZOOM

When you want to combine pulling power with flexibility, this is the zoom you need. Covering an extensive range of focal lengths and using high quality optics, it's a popular choice with wildlife photographers in particular. The more popular focal lengths for these zooms are the 80-400mm and 150-600mm. While they can be used handheld, these lenses are heavy so are usually best used on a tripod or monopod.



Telephoto lenses are the ideal choice of lens for portraits, producing a flattering perspective.

WHAT TO SHOOT WITH TELEPHOTOS...



ANDREY-FREEMENKO/SHUTTERSTOCK

● **PORTRAITS:** The flattering perspective of a telephoto makes it the number one choice of lens for dedicated portrait photographers. Longer focal lengths are suitable, but many enthusiasts and pros prefer shorter, faster telephotos such as the 85mm f/1.4 and the 135mm f/2, as they produce beautiful bokeh.



BEN HALL

● **WILDLIFE:** The pulling power of a powerful telephoto lens really comes into its own when you're stalking animals and birds and need to keep your distance. While a 70-300mm may be suitable, if you're really serious about wildlife photography, you should consider the likes of an 80-400mm or 150-600mm zoom.



ASPHOTO/SHUTTERSTOCK

● **SPORTS:** Sometimes it's just not possible to get close to the action, so the only way to fill the frame with the subject is to use a telephoto zoom. Depending on the sport you're covering, you may be able to use a 70-200mm or similar, but if not consider a more powerful lens that reaches 300mm, 400mm or even 600mm.

OTHER POPULAR LENS TYPES

WE'VE COVERED A RANGE OF POPULAR LENS TYPES BUT THERE ARE OTHER USEFUL AND MORE UNUSUAL OPTIONS TOO

Macro lenses with a 1:1 reproduction ratio and focal length of 90mm or more are ideal for capturing insects in detail.



ROSS HODDINOTT

MACRO LENS

If you're keen on shooting close-ups and want to progress your skills, then you can't do better than to invest in a dedicated macro lens. These allow you to fill the frame with miniature subjects and capture them at either life-size (1:1) or half-lifesize (1:2). As they're designed for macro work, you can focus at very short distances and the image quality is fantastic. There are three main focal lengths of macro lens, the 60mm short telephoto, 90mm/100mm medium telephoto and longer 150mm/180mm/200mm telephoto macros. All can be used for general photography too, and thanks to their fast maximum aperture, they double up as excellent portrait lenses. If you're serious about close-up photography, a macro lens is well worth the investment.



TAMRON SP90MM
F/2.8 Di VC USD **£400**

Easily one of the best value macro lenses available, the Tamron boasts nice handling, Vibration Compensation and top quality optics. Definitely one to consider.



CANON EF100MM
F/2.8L MACRO IS USM **£740**

A stunning lens for Canon users, with beautiful handling, weather-sealed barrel and excellent image stabilisation. Its best feature is the incredibly sharp optics.



SIGMA 180MM
F/2.8 EX DG OS HSM APO **£1,300**

This large, heavy lens is built to last and produces incredibly sharp results thanks to excellent optics and useful Optical Stabilisation. Sure it's pricey, but it's well worth it.

MY FAVOURITE LENS...



Ross Hoddinott
Nature & landscapes

"I shoot a wide range of subjects, but for macro, my favourite lens is the Nikkor 200mm f/4 Micro. This is an old design – it's built like a tank and weighty but it is optically brilliant. Its telephoto focal length allows me to work further away from my subject – perfect for when I'm shooting flighty, timid wildlife, like insects. Also, its narrower angle-of-view helps me to capture clean, diffused backdrops. However, due to its size and weight, it's not a great lens for handheld use. For handheld close-ups, I favour the Nikkor 105mm f/2.8, which also boasts image stabilisation – a useful additional function. If you intend on shooting wildlife, I'd definitely recommend opting for a macro upwards of 100mm, otherwise, a shorter, lightweight macro lens – in the region of 60-90mm – will suffice."

STANDARD LENS

Amongst the smallest, lightest and most affordable lenses, the 'standard' 50mm f/1.8 (or 35mm for APS-C users) is an optic every photographer should own. Their size and weight are ideal for travel, while the focal length makes it perfect for general use, such as candid, portraits and documentary photography. As well as the popular f/1.8 lenses, there are faster f/1.4 versions available, but we'd suggest you save your money to start with and stick with the budget option.



CANON EF 50MM
F/1.8 STM **£100**

This recent update of the classic 50mm f/1.8 II lens adds fast STM focus to the original design. Weighing only 160g, this prime is capable of excellent results.



NIKON AF-S 35MM
F/1.8G DX **£175**

Designed for APS-C DSLRs, this lens effectively replicates a classic '50mm'. Very compact and lightweight, it produces very sharp results with beautiful bokeh.



FUJIFILM XF35MM
F/2 RWR **£370**

Designed for Fuji's X-series CSCs, this offers an effective focal length of 53mm. The compact barrel is weather-resistant, while the optics deliver first class results.

STANDARD ZOOMS

The standard 'kit' zoom supplied with your camera covers a useful range and, while its optics deliver reasonable image quality, it's worth updating once you can afford to. We're not talking about investing in the expensive f/2.8 models aimed at the pros, but rather opting for a mid-range standard zoom. These usually offer a range of benefits, including improved build quality and handling, a wider range, faster maximum aperture and better optical performance.



SIGMA 17-70MM
F/2.8-4 DC OS HSM **£320**

For APS-C Canon and Nikon DSLRs, this well-priced zoom offers a fast maximum aperture, optical stabilisation and excellent AF. Image quality is high.



CANON EF 24-70MM
F/4L IS USM **£700**

About as good a standard zoom as you'll find before you reach the premium f/2.8 versions, this Canon offers excellent image quality, fast AF and superb handling.



NIKON AF-S 24-85MM
F/3.5-4.5 G VR **£430**

This is a great standard zoom for all Nikon DSLRs. It covers a decent zoom range and features excellent autofocus, Vibration Reduction and very good quality optics.

SUPERZOOM

In terms of versatility, there is no other lens that comes close to matching the focal range on offer from a superzoom. With focal lengths covering everything from wide-angle through to telephoto, you could in theory leave a superzoom permanently attached to your camera and never need to remove it. Early versions were slow, bulky and not great quality, but the latest offerings are more compact, boast faster AF, image stabilisation and much better quality optics. For full-frame users there are a number of 28-300mm zooms, which boast a very useful 10x zoom range. APS-C users have 18-200mm zooms that give a similar effective focal range, along with more powerful options such as the 15x 18-270mm and the 18.8x 16-300mm 'megazoom'. In terms of versatility, there is nothing to touch them!



SIGMA 18-200MM
F/3.5-6.3 DC OS HSM **£250**

If you're on a budget, you won't find better than this small, versatile zoom. Boasting a stabiliser, Hypersonic focusing and a macro facility, it's packed with features.



TAMRON 16-300MM
F/3.5-6.3 DI II VC PZD **£430**

It's hard to believe such a compact lens can cover such a big range. Not only does this have a 18.8x zoom range, it also has a useful macro mode. A very neat package.



TAMRON 28-300MM
F/3.5-6.3 DI VC PZD **£600**

With fast Piezo autofocus, splash-proof design, Vibration Compensation and premium optics, this Tamron is an excellent choice for full-frame users.

OTHER LENS TYPES



LENSBABY: These novel, lightweight lenses use a flexible barrel that allows you to selectively focus on the subject and

capture creative results with relative ease. There's a wide range available, all delivering good quality results, ranging from the budget Spark (£75) to the more sophisticated Edge (£230) and Composer Pro II (£400).



PANCAKE LENS: Designed to offer a very compact and lightweight lens for travel, the pancake lens uses a simple optical

design to minimise size, yet delivers very good quality results. Most pancake lenses cover a wide-angle or short telephoto focal length. Examples include Canon's (£170) EF 40mm f/2.8 and (£130) EF-S 24mm f/2.8, (£230) Olympus 17mm f/2.8 and (£200) Sony E20mm f/2.8.



TOY CAMERA LENS: Fancy joining the cult 'toy camera' brigade and shooting blurry, low-sharpness results made

famous by Holga? If you are, you'll find a variety of cheap and cheerful options for your camera. Check Amazon and eBay for Holga and Diana lenses for as little as £10.



TILT/SHIFT LENSES: While a Lensbaby offers an easy and affordable way to alter perspective, these specialist lenses sit at the

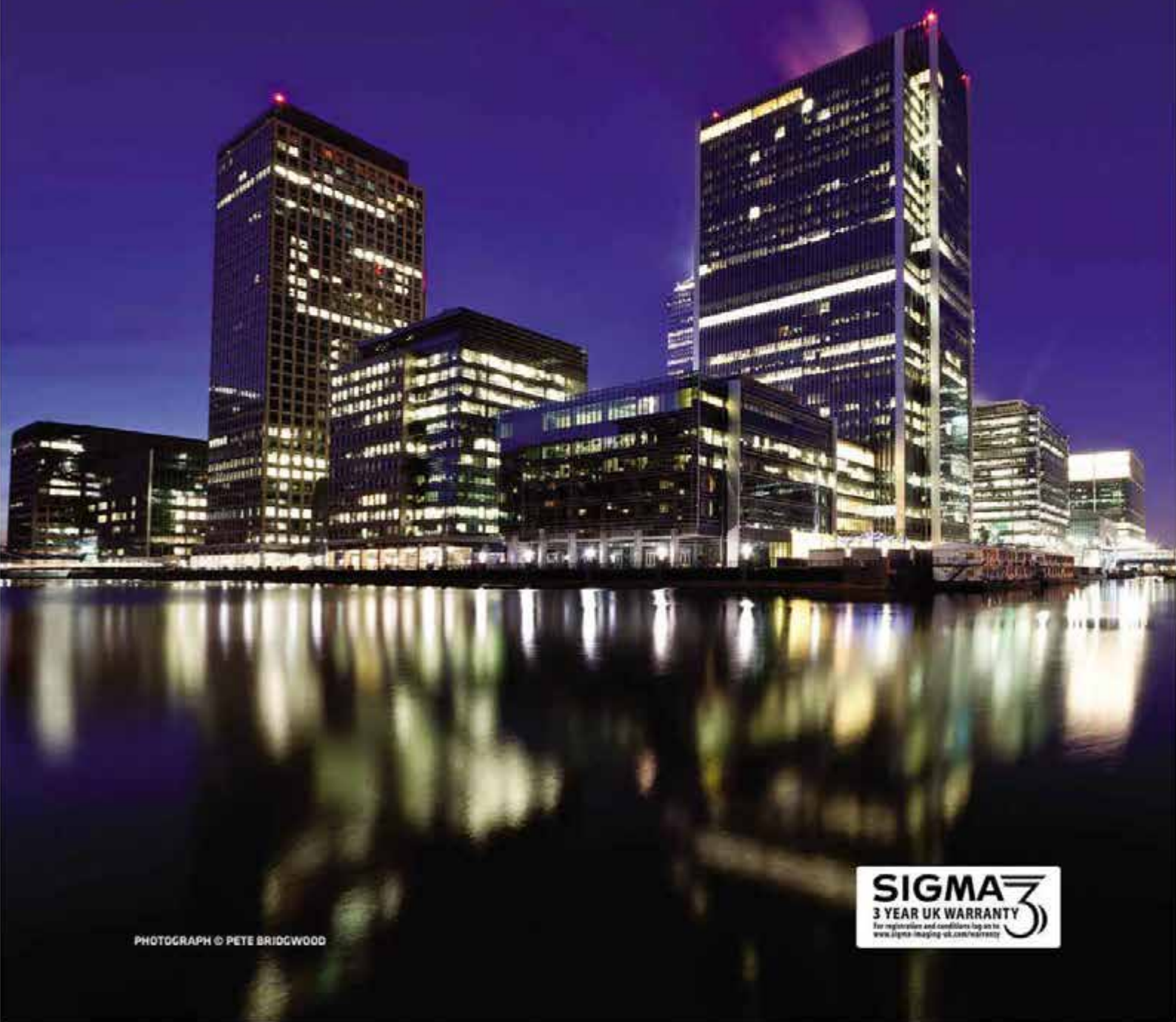
opposite end of the price and difficulty scale. They alter the plane of focus and control the direction and extent of depth-of-field. Used extensively by pro architectural photographers, they also allow for the correction of converging verticals.



MIRROR LENSES: Using a clever 'mirror' design, these lenses give super-telephoto power in a relatively compact,

lightweight and affordable package. Most give focal lengths of 500mm or 600mm. They have a fixed aperture of f/8, are manual focus and produce adequate quality results. Check out models by Samyang and Danubia.

SIGMA



PHOTOGRAPH © PETE BRIDGWOOD

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SIGMA 10-20^{mm} F3.5 EX DC HSM

For Sigma, Canon, Nikon, Sony and Pentax.
Supplied with fitted padded case
and petal type lens hood.
Compatible with APS-C SLRs only.

This super-wide angle zoom lens for digital SLR cameras has a maximum aperture of F3.5 throughout the entire zoom range and its super-wide angle enables breathtaking perspective and one-of-a-kind shots.

ELD (Extraordinary Low Dispersion) glass, SLD (Special Low Dispersion) glass and aspherical lenses provide excellent correction of all types of aberrations. The Super Multi-Layer Coating reduces flare and ghosting and the incorporation of HSM (Hyper-Sonic Motor) ensures a quiet and high-speed auto focus.

2017 Photo Resolutions

It's time to take your best ever pictures...

HOW SIZEABLE IS YOUR RESOLUTION FOR 2017? WE'RE NOT TALKING ABOUT PIXELS, ALBEIT A NEW CAMERA MIGHT BE ON THE LIST, BUT YOUR LOFTY AMBITIONS FOR NEW ACHIEVEMENTS AND SKILLS TO MASTER. RATHER THAN SIMPLY SAYING 'I WANT TO SHOOT MORE', WE'RE OFFERING YOU 12 WAYS TO HELP YOU PROGRESS, CHALLENGE YOURSELF AND GENERALLY ASPIRE TO CREATE GREAT IMAGES. YOU COULD DO ONE A YEAR OR ONE A MONTH, JUST MAKE IT YOUR MISSION TO DO AT LEAST ONE!

IMAGE: STOCKPHOTO MANIA/SHUTTERSTOCK

WASSONWITZKIMITH





STEVEN WEI



ADAM BURTON

1 Experiment with perspective Straight and eye-level is how the majority of us shoot every day, so unless you're 4ft or 8ft tall you're generally shooting a scene how most people see it and, well, that can be boring. Show them something different by changing your view: get on the ground, get up high or turn your camera to the sky. You may be amazed at what opportunities you're missing by looking in the same direction everyday. Even if you shoot straight, try shooting through something else to introduce some foreground bokeh and depth, such as foliage or a window for reflections, or skew the camera to make it more dynamic – anything that alters you and your viewer's perspective of a scene. For fun, you could try forced perspective to create optical illusions by tilting the world, and your subjects, on their side.

2 Master panoramics

Take in a wider view and make it your goal to master capturing panoramics. It's a photographic technique that relies heavily on in-camera technique, but done well can allow you to capture stunningly detailed large-format images. While you can shoot panoramics handheld, we'd advocate using a tripod where possible for extra accuracy. Line up your scene, work out the right exposure for the image (a quick test shot in aperture-priority mode will help) and switch over to manual exposure mode. Take your first shot, and then pan your camera so that the next frame overlaps between 30-50% with the first and take your second shot. Keep going until you've captured the full scene. The frames can then be combined using Photoshop or Lightroom's Photomerge feature, or dedicated software such as PTGui. Once you've got to grips with the technique, try out mini-planetes, 360° panoramics and even 360° video using specialist cameras such as Nikon's KeyMission 360 action camera.





Pro tip with Nikon

Adam Burton

Landscape expert



HELEN DIXON

3 Try new locations

How far do you go in search of a photograph? Although your doorstep shouldn't be dismissed, not venturing further than your locality can leave your portfolio looking stale. Scouting new locations isn't only for landscape photographers: seek out spots with interesting backdrops and lighting for portraits, or visit an area known to attract a certain type of wildlife you've wanted to see. It's worth going the extra mile for a new outlook. If you're an outdoor photographer, then it's time to start working through that 'bucket list' of must-shoot locations at home and abroad. Take that photo holiday, go hiking in the Isle of Skye for an epic view or try somewhere you've never even considered – you might be surprised! Each month in this very magazine we provide you with a *Location Guide* that details the top photo hotspots, viewpoints, trails and even where to eat and sleep, so make sure you look through your back issues to find one that gives you the travel bug. Whether it's a UK city, a tourist hotspot like Santorini or one of Britain's amazing rural locations you're after, there will be something for everyone.



CLARK YOUNG

4 Shoot environmental portraits

Look around your locality and we'll bet there are all kinds of interesting characters that you come into contact with on a daily basis. Capture a portrait of your local area by shooting a series of environmental portraits of the people that live, work and play there. Environmental portraits are those that, you guessed it, depict the person as part of their setting. For example you might photograph the local butcher standing behind the counter in his or her shop, or a farmer in their field or a farmyard. Look for interesting characters and environments that have a story or aesthetic to them – you'll often find they've got interesting stories to tell that make for great captions. Environmental portraits can be posed or natural, but remember to consider what you include, and exclude from the composition – the background should tell the story of the person, but not distract. In terms of focal lengths, a 35mm lens (approx. 23mm APS-C equivalent) is the go-to option for environmental portraits.



MARIO SHUTTERSTOCK



RAY HENNESSY

5 Shoot wide open

Wide apertures demand skill; the wider the aperture, the more precise your focusing needs to be. You'll want a fast lens with a maximum aperture of at least f/2.8 to do this challenge justice, but it doesn't need to cost the earth. A 'nifty fifty' (like the NIKKOR 50mm f/1.8D) can be had for around £100. Working at wide apertures, you have to consider the composition of your focal point carefully, as it'll be the only part of the image that's sharp. Use aperture-priority mode and manually select a single focus point, rather than letting the camera do it for you. You'll quickly understand focal plane and how it affects depth-of-field. On the flip side, you get gorgeous images with creamy backgrounds, bokeh and stunning softness. It's not just for still-lives and portraits, landscape photographers should give it a go too, as it will force you to look at scenes in a whole new way.

6

Go big on projects

We mean taking on a whopper of a project: an idea you've pondered but put off, something creatively and skillfully challenging, and as daunting as the day you first picked up a camera. If you're stuck for ideas, set a theme to get the juices flowing. It could be seasonal-, time- or subject-based like a winter portrait, light trails or toys, or concepts such as love or guilty pleasures. Whether it involves software or studio lighting, visiting new vistas or a lofty personal project, testing your skills is a sure-fire way to push your photography forward. Nikon Ambassador Kirsty Mitchell started her acclaimed 'Wonderland' project with a series of smaller projects, amounting to a collection of work that changed her life. Who knows, 2017 might be a special year for you and your photography.

IMAGE: ELINA LAVA/SHUTTERSTOCK



JOHAN SWANROEL/SHUTTERSTOCK



The perfect way to add new skills!

The Nikon School at the new Nikon Centre of Excellence in central London offers a wide range of photography courses and workshops. Why not treat yourself or someone you love to a Nikon voucher that can be used at the Nikon School. For further details, visit: www.nikon.co.uk/training



7 Master monochrome It might only be two tones, but mastering black & white photography can be a lifelong endeavour that you might want to start now. You'll be mistaken in believing it's easier than working with colour. You need to train yourself to see the world in black, white & grey. While differences in colour play a part in creating a strong monochrome picture, learning the effect of luminosity is much more important. You could have a vibrant multi-coloured scene that, when converted, looks flat, grey and lifeless; it's the colour's luminosity that's key and to know that is a skill learned by doing. Even though modern masters have the luxury and flexibility of converting in post-production, there's so much choice it's easy to overcook it and it has arguably become as much of an art form as the darkroom used to be. Photoshop and Lightroom have plenty of functions for converting, but programs such as the free Nik Software's Silver Efex Pro offer darkroom-inspired controls and effects, even film types, which can dramatically change the look of a scene. There's plenty to learn and plenty to master, so if your black & whites are left wanting consider immersing yourself in a monochrome world.

EVGENY ATAMANENKO/SHUTTERSTOCK



8 Plan for family moments

As the years swing by we're left wondering where the time goes, amazed by how quickly our family grow and the moments we lose to the past. In our fast-paced lives, it's all too easy to snap a quick shot on a smartphone or to set the camera to Auto during a special occasion, but this year will be different. Make it a new tradition to create portraits each Mother's and Father's Day, to capture a picture with your partner on Valentine's Day or candids at Christmas. Birthdays are an obvious choice, but rather than grabbing the obligatory candle blow, you could plan a shoot to reflect their age and stage of life. You're only limited by your creativity. Of course, it doesn't have to be a ritual: you could plan a picnic in the right location for the right time of day or simply set some time aside with your family capturing their interactions; don't forget to include yourself in some of the shots too, though. Be more proactive, and less reactive, with your photography and you'll capture some stunning memories.



LEE FROST



LEUNGCHOPAN/SHUTTERSTOCK

9 *Get creative with light*

There's a saying amongst photographers – light is light. What does that mean? Basically, any light can be used to create images, you just need to know how to use it to your advantage. Smartphones and tablets can become softboxes, torches are focused spotlights, and candlelight can add a warm glow to a portrait. If you've got young children in the family, then try photographing them illuminated only by the glow of a tablet computer – they'll be so mesmerised they won't notice anyway! Remember, if you're shooting in low light then don't be afraid to open up your aperture and increase the ISO. Modern cameras like Nikon's D5500 record fantastic results at high ISOs. Think outside the box when bouncing light too – any reflective surface can add a touch of fill, but avoid surfaces with a strong colour, which add a cast to images that is tricky to remove.



10 Build a home studio

It's every portrait photographer's dream isn't it? Your own dedicated studio facility kitted out with all the lighting equipment and props you'll ever need, and more. For most of us it'll have to remain a dream, however you don't actually need all of that to create compelling portraits in your own home. All you need is enough space to set up a paper backdrop, lights (flashguns like Nikon's Speedlight SB-910 will do), a couple of light stands, and modifiers. There are endless choices when it comes to background colour, but a mid-grey seamless is a wise choice. It can be underexposed to black, or lit up to white, as well as turned any colour you wish with flash gels. Light modifiers such as softboxes are cheap and versatile, and work with flashguns or studioflash. Add some tasteful props such as an old wooden chair, crates or a ladder. Turn to page 43 for more ideas on how to create a versatile home studio on a budget.



CLAY COOK



11 Spend a day with a pro

How do they do that?! A question we've all pondered as we muse over the social media of our favoured photographers, enamoured by their creations inspiring us to shoot better. Give yourself a jump-start by tackling a training course or two. There are dozens of providers led by professional photographers waiting to give you a hand, whether you're wanting to get to grips with the basics, master lighting techniques or advance into new areas of photography, check out our *Classified* section for suggestions. Nikon School also offers a wide range of courses from film noir to macro, and many of our contributing professionals such as Ross Hoddinott, Lee Frost and Adam Burton supply group and one-to-one opportunities. So if you want to grow, time to learn from a pro!

Celebrate 2017 with Nikon

New year, new Nikon kit!

If you didn't quite get your Christmas list's load of photo goodies, you might be on the look out for some New Year's bargains to improve your arsenal. If a camera upgrade is on the cards, carefully consider what you want. Do you need exceptional autofocus performance and a fast frame rate like the D500 and D7200, or are you looking for an extra 'smart' DSLR built for sharing, like the D3400? You might even think it's time to switch from DX to FX. Then again, if it's a jump in image quality you're looking for focusing on upgrading your glass might be the way to go. Whether it's getting a faster version of your favourite focal length, like upgrading to the AF-S 50mm f/1.4G from the f/1.8G optic, or opting for an all-new focal range to try your hand at close-up or landscape photography, a new piece of glass can reinvigorate your photography. If, however, your budget won't stretch to the bells and whistles, perhaps investing in a Speedlight or two is a smart move, such as the SB-5000 or SB-500, to make the most of Nikon's easy-to-use Creative Lighting System. Just by introducing a new piece of kit to your bag of tricks, you'll be inspired and empowered to try new approaches.

12

Rise before the sun

It's tough dragging yourself from the warm clutches of your bed when it's cold and dark out, but by retreating beneath the sheets you're missing the most magical time of the day. Now's the time of year for it, as the light is better for longer and sunrise is at a reasonable hour! Aim to arrive an hour before the sun to capture the colour in the sky before the sun's orb appears – this is a great time to shoot silhouettes! Want to make it a challenge? Aim for 100 sunrises in 2017.

Some might be dull or damp, but others will be majestic and awe-inspiring. Either way, we guarantee you'll come away with more than a handful of incredible images just from being in a good location and capturing the world as the first light of day arrives.

IMAGE: HELEN DIXON



The Big Interview

CREST OF AWAVE

SHOT WHILST SUBMERGED IN THE NEAR-FREEZING WATERS OF LAKE ERIE, DAVE SANDFORD'S THE GREAT LAKES SERIES HAS BEEN A HUGE SUCCESS. JORDAN BUTTERS CHATS TO HIM ABOUT THE STORY BEHIND THESE POWERFUL IMAGES...



Dave Sanford

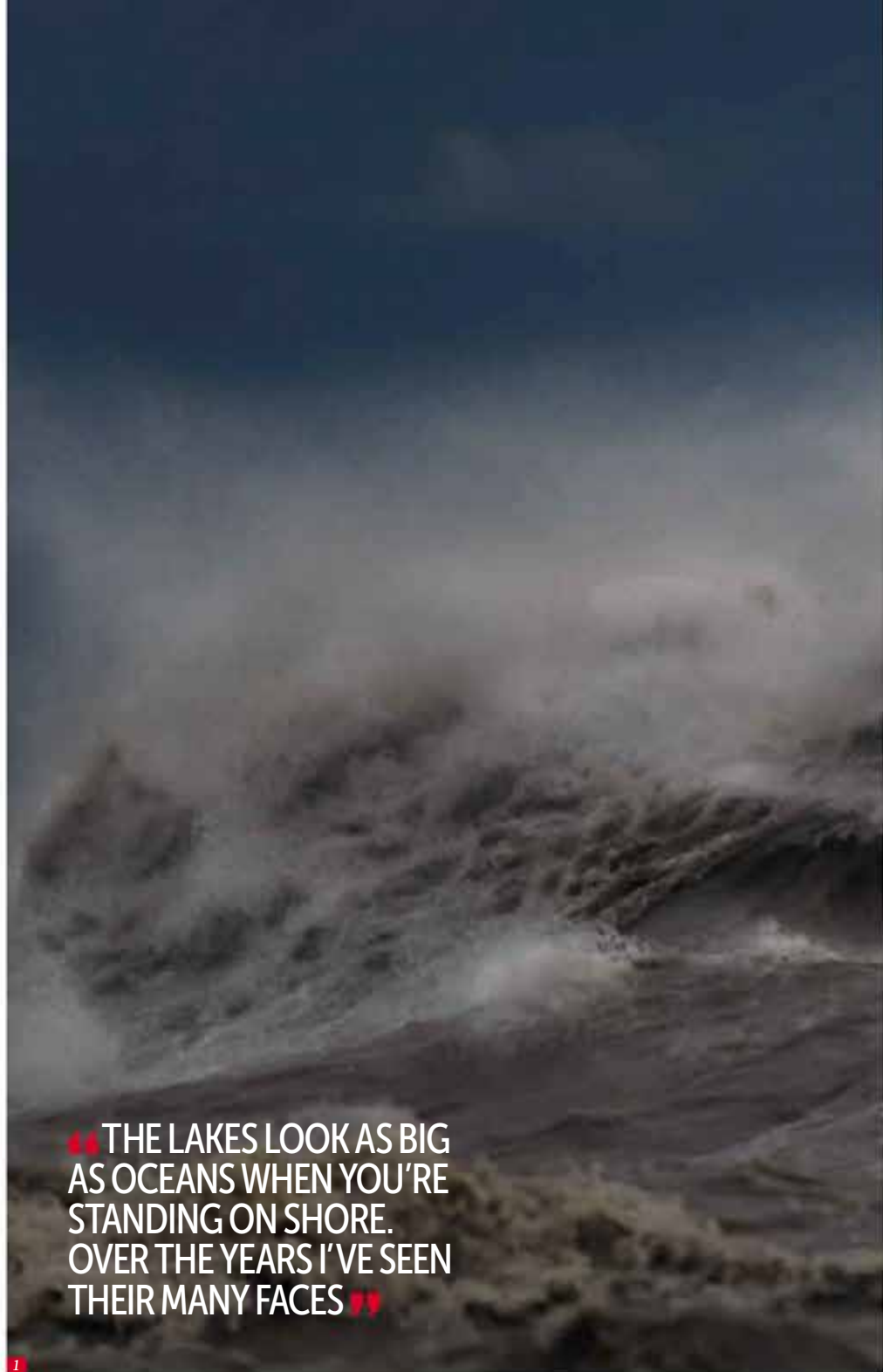
“**L**AKE ERIE, IN CANADA’S Great Lakes region, is a haunting place riddled with folklore and legend. There have been more shipwrecks on Lake Erie than any of the Great Lakes – hundreds and thousands of people have lost their lives to the waters. There are tales of hauntings on or near the lake, and legends of a Lake Erie monster. There’s the storm hag, which is said to reveal herself before she takes ships down. Perhaps that’s why these images resonate with people – you can see shapes and figures in the frozen moments of crashing water – it’s almost like souls are trying to escape the water and the lake is pulling them back in.”

Professional sports and nature photographer Dave Sanford sets the scene well, and provides the perfect prologue to his sinister and foreboding ‘Great Lakes’ series. Ontario-based Sanford is possibly best known for his 20 years of work photographing the National Hockey League, but he’s also worked with the NBA, Major League Baseball, the Winter Olympics and the Super Bowl too. Alongside his talent in photographing sports, he’s been fascinated by the natural world for as long as he can recall: “When I was younger, I was torn between sports and wildlife photography, but I decided to pursue sports,” he explains. “I figured that if I can make it as a sports photographer, I can shoot nature on the side and maybe eventually build a career from that too. If I took the other route I can’t exactly show up at the Olympics as a nature photographer! Now I’m in a fortunate position that, as busy as I am with sports, I have a lot of free time, which allows me to travel to different places and take on different assignments on the nature side of things.”

Having grown up surrounded by the Great Lakes, Dave feels at home in, on and around the water and was compelled to explore the possibilities of taking his camera into the depths. “I have an admiration for wave photographers, such as Clark Little, and for five or six years I wanted to, for the lack of a better term, ‘dive in’ to that aspect of photography. My sister lives in Australia and I was fortunate enough to be connected with ocean photographer Warren Keelan. Warren is my mentor, and accelerated my process of shooting in the water by years, just from learning from him, and going out and shooting with him. I’m forever grateful to him for taking me under his wing.”

A world away from the rolling crystal waves of Australia and back home on the Great Lakes, Dave had a vision to showcase the power of the lakes, and in particular Lake Erie. “The lakes look as big as oceans when you’re standing on shore. Over the years I’ve seen their many faces – from placid, calm waters to super-rough storms,” he tells me. “People who haven’t visited the Great Lakes can’t believe that we get waves like this on an inland lake. Even people that live here in the region have no idea this phenomenon occurs – they often only go to the lake in 25–30°C weather and under sunny, blue skies!” ➡

Previous page) ‘Eerie Erie’. 1) ‘G.W. JACKSON – Port Stanley’.
2) ‘Bane Of The Great Lakes’. 3) ‘Brain Wave’. 4) ‘Neptune’.



1

“THE LAKES LOOK AS BIG AS OCEANS WHEN YOU’RE STANDING ON SHORE. OVER THE YEARS I’VE SEEN THEIR MANY FACES”



2



3





The ideal conditions for Dave's craft occur from October to December when the cold, Arctic air comes down and mixes with the departing, warmer summer air, creating a storm that churns the lake into a frenzy. The waves are wind-generated, and the conditions and wind direction have to be just right. "With wind speeds of up to 100kph, the waves are usually in the neighbourhood of ten feet high, and on some days upwards of 15ft," he explains. "The waves are pushed across the lake towards the town of Port Stanley. They roll into the shallow area and rebound off a large pier. The rebounded water then moves back out across the shallow area, picking up sand and silt from the bottom, which is what gives the water a dark, gloomy look. This outgoing surge collides with incoming waves – the water has nowhere to go but up, creating these powerful, momentary displays of natural force."

To capture these moments from the right angle demands Dave to be in the water himself, most of the time. He often finds he's the only person there too, and certainly the only one enjoying the lake on the kinds of

days he needs for these majestic waves. Maybe enjoying isn't the right word? "The water's cold!" He remarks. "It's typically seven to eight degrees Celsius and just above freezing later in season. The air temperature hovers around the freezing point, or if I'm lucky I might get air temperatures in low teens. The conditions don't allow you to remain in the water for very long, even in cold water gear. As comfortable and confident as I am, you can't be cocky – the water is always going to win. I wear a life-jacket, and have a spotter on shore. You have to use your spidey senses and know when it's too dangerous to go in, or if you're already in when it's time to get out! Where I'm standing it's fairly shallow – the water is only up to my chest, but it's like being in a giant washing machine. The lakebed drops off quickly from there and it's hard to get your footing. I'm still a couple of hundred feet from waves breaking, as you wouldn't survive if you were in their path."

Dave is well-versed in capturing action, and draws upon his sports experience when he's in the lake. Much like when shooting hockey, his knowledge of the subject allows

“YOU CAN SEE THAT WATER MOVING BACK OUT, IT'S ALMOST LIKE A SERPENT RISING. YOU CAN ALMOST TIME IT AND TELL WHEN IT'S ABOUT TO EXPLODE UPWARDS”

him to predict the decisive moment, and anticipate the right time to press the shutter. "I'll spend time watching what's unfolding when I arrive. I can't say there's a rhythm to it, but I'll sit and study and learn how to anticipate it. You have to anticipate – it happens so fast that you can't react to it. If you're reacting to what you're seeing then you've missed the moment. You can see that water moving back out, it's almost like a serpent rising. You can almost time it and tell when it's about to explode upwards."

"There's a very good correlation between sports and this," Dave continues. "I'd say



90% of my sports photography is shot with strobe systems, so I've only really got one shot every two to three seconds with the power packs recycling. That way of shooting really helps you hone your timing – you've got to anticipate that peak moment as you've only got one shot at it. While I'm not strobing the wave images on Lake Erie, you still want you timing to be perfect and to anticipate that peak moment."

When it comes to recording the water as frozen sculptures, shutter speed is king. Depending on the light and the time of day, Dave tells me he's typically shooting at between 1/2500sec and 1/6400sec, with his Canon EOS-1D X in an Aquatech Delphin 1D housing, with the camera set to its maximum 12fps burst, so he doesn't miss a moment. "The waves are explosive and things happen so fast," he says. "You can view a ten frame burst and the images either side of the frame that I choose are drastically different. We're talking fractions of a second – it's amazing how fast the water moves in that time."

These split seconds, frozen in time, reveal shapes, figures and even faces in the crashing, gloomy water. To the naked eye the

shapes are invisible, and it's only when Dave stops time at the press of his shutter that they become apparent. "No two frames are ever the same, and that moment is never going to be captured ever again," says Dave. "You never know what you've going to get. When you're talking about water and light and the shadows it creates, the things that you can see within them are sometimes absolutely mind-blowing. When I shot 'Eerie Erie', with the skull in the wave (see opening image), it was Friday the 13th. I looked at the back of the camera in the seconds following and my jaw dropped. I'm thinking 'you've got to be kidding me!' Very eerie!"

While most of the images that you see on these pages were captured last year, it's now storm season again in the Great Lakes, and Dave's most likely in the water as you read this, conjuring up more mystery and magic with his camera. The initial success he found with his wave photography was unexpected, but it is now pushing his career in an entirely new direction, away from sports and towards his initial dream of recording the natural world. There are also lots of eyes on him, with people waiting to see what wonders he

1) 'Lake Erie Monster' 2) 'The Sandman' 3) 'Lady Of The Lake' captures next on the mysterious Lake Erie. "I always put high expectations on myself, but now that the Great Lakes series is out there, there's also expectations from news agencies and publishers that want to see more of this kind of work from me too. I always cross my fingers that the conditions are right, so around this time of year I make myself available and make sure I'm home to capitalise on things. At this point it's safe to say that nature photography is surpassing sports now for me. It's a direction that I want to continue moving towards. I'm not ready to give sports up, but with opportunities coming up for assignments in Antarctica, the Arctic and Australia photographing nature, it's the direction that I want to go in. I don't think there's anything else in this world that makes me feel the way I do when I am capturing a scene on Lake Erie, or photographing polar bears or great white sharks or whales. There's no better show in this world than what Mother Nature can put on. Nothing man can do can compete with that."

To view more of Dave's nature work, or to purchase prints, visit: www.davesandfordphotos.com

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LandscapePro

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f2 Cameracraft Sept/Oct 2016

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FUJIFILM X-T2

FUJIFILM'S LATEST RETRO-STYLED MIRRORLESS MODEL IS AIMED AT ENTHUSIASTS AND PROS LOOKING FOR A STYLISH AND LIGHTWEIGHT CAMERA WITH SUPERIOR PERFORMANCE



Plus

GEAR NEWS: The latest kit news and releases from the ever-changing world of photography *Page 107*

BUYERS' GUIDE: We round up our pick of the best premium enthusiast and pro cameras *Page 112*

MINI TESTS: Explore motion with Syrp's Genie Mini, plus Lumejet's online printing service rated *Page 119*

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NEW NIKON SNEAKS INTO PLAY

FRESHLY UPDATED ENTHUSIAST MODEL BRINGS WITH IT ADDED CONNECTIVITY

IN WHAT WAS considered by many to be a relatively low-key product launch, Nikon has snuck out a new DSLR onto the market, just in time for the festive season. The Nikon D5600 is a 24.2-megapixel DX-format digital SLR aims at enthusiast photographers. Boasting Nikon's EXPEED 4 image processing engine, a versatile ISO range of 100-25600, 39-point autofocus system (nine cross-type sensors), and up to 5fps stills shooting in continuous burst mode, the D5600 looks well equipped to take on any subject.

There's also Nikon's new SnapBridge wizardry within, which uses Bluetooth low energy technology to provide a constant, low-power link to a compatible smartphone or tablet for instantly transferring images and video, as well as built-in Wi-Fi capability offering remote shooting from your phone.

There's a tilt and swivel multi-angle touchscreen LCD, and video fans are well catered for with Full HD video at up to 60fps, as well as continuous LiveView autofocus, a Flat Picture Control setting for advanced post-processing, and a built-in time-lapse mode, handed down from Nikon's high-end DSLRs. The bright optical viewfinder offers an impressive 95% coverage with around 0.82x magnification and the camera is light, weighing in at just 415g, which should make it a joy to both carry and use.

Nikon is offering the D5600 as a part of two lens bundles – either with the Nikkor AF-P 18-55mm f/3.5-5.6G VR or Nikkor AF-S 18-140mm f/3.5-5.6G ED VR. The camera is available now for £800 with 18-55mm lens, or £990 with 18-140mm lens, respectively. www.europe-nikon.com



THE CULLMANN COLLECTION

Cullmann has announced a number of new additions to several of its product lines. The (£180) Mundo tripod features an integral monopod and will be available in four colours. Also launched are three mini travel tripods ranging from £60 to £80

in the Neomax series, each featuring an aluminium ball head and supplied with a carry case. The new Stockholm range of bags (from £45 to £90) are designed with a clean, minimalist look and includes a daypack and four shoulder bags.

Also announced is the E250 CUlight FR60 flashgun and five CUlight LED video light panels, ranging in price from £50 to £300.

www.intro2020.co.uk

TAKE TO THE SKIES

Following the Mavic Pro's launch in October, DJI has released another two new drones!

The Phantom 4 Pro (1) builds upon the success of the existing Phantom 4, and packs a one-inch 20-megapixel sensor capable of shooting 4K at up to 60fps, and stills at 14fps. The Pro is the first DJI drone to use a mechanical shutter, eliminating rolling shutter effect in video. With a titanium and magnesium chassis, the Pro retains a similar weight to the Phantom 4, despite adding more advanced flight sensors.

Also new from DJI is the flagship Inspire 2 (2). This futuristic-looking aircraft offers a CineCore 2.0 image processor capable of 5.2k footage. The processor is built into the aircraft, allowing it to be used with the DJI X4S and X5S cameras. The Inspire 2 can zip to 50mph in just four seconds, and onto a top speed of 67mph. There's a new dual battery system, allowing up to a claimed 27 minutes of flight time.

Both drones are available to order now, although demand is due to be high, so we'd advise to take delivery dates with a pinch of salt. The Phantom 4 Pro will set you back £1,590 while the Inspire 2 retails for an eye-watering £3,060! www.dji.com



IN BRIEF...

SENSOR OVERLOAD

Advanced image sensor supplier CMOSIS has unveiled the CMV50000, the world's first global-shutter full-frame CMOS sensor. It's unlikely to make its way into consumer-grade cameras, but the technology could trickle down in future developments. The CMV50000 boasts a resolution of 48-megapixels and can handle 8K video at 30fps! www.cmosis.com



LEICA TL SYSTEM

High-end imaging experts Leica has announced its latest camera system – the Leica TL. Building upon the existing Leica T system, each TL is machined from a single block of aluminium for a premium, solid feel. The camera packs a 16.2-megapixel APS-C sensor and is compatible with Leica's TL lens portfolio. Available in black, silver or titanium anodised finish, you'll need to dig deep to the tune of £1,450 if you fancy a TL for yourself. uk.leica-camera.com



Cashback season

CANON Canon will hand over £100 cashback on the full-frame EOS 6D, with up to £80 cashback on a range of other DSLRs, mirrorless models and compacts. There's also up to £160 back if you buy a qualifying lens, printer or accessory too. www.canon.co.uk/cashback

NIKON Nikon is offering up to £510 cashback on a range of its products, including up to £85 if you buy a qualifying DSLR, or up to £170 on certain lenses. If you purchase a DSLR and up to three lenses, you can receive up to an extra £170 off your purchase. www.nikon.co.uk/cashback/

FUJIFILM Many of Fujifilm's cash back offers expired at the start of December, but you can still claim up to £100 trade-in bonus on your old camera when you chop it in for a Fujifilm X-Pro2, X-T2, X-T1, X-E2S or X-T10. www.fujifilm.eu/uk/products/digital-cameras/promotions

OLYMPUS Between now and 15 January 2017, Olympus is offering up to £75 cashback on the excellent OM-D E-M5 Mk II and OM-D E-M10 Mk II mirrorless models, as well as up to £75 back when you buy qualifying lenses. www.olympusuk.sales-promotions.com

PENTAX Be quick for this one! There's a £100 trade-in bonus when you trade in any working DSLR or mirrorless camera for a Pentax K-1 before the end of the year. The offers applies to official recognised Pentax dealers only. www.ricoh-imaging.co.uk/

FUJIFILM X-T2

The latest retro-styled flagship in Fujifilm's X-series of mirrorless models offers one of the best alternatives yet to a digital SLR

Test: DANIEL LEZANO

SPECIFICATIONS

Price: £1,400 (body only) / £1,650 (XF18-55mm)
Image sensor: APS-C X-Trans CMOS III (23.6x15.6mm)
Resolution: 24.3-megapixels
Maximum image resolution: 6000x4000 pixels
AF system: Hybrid (TTL contrast / phase detection AF)
Metering: 256-zone, spot, average & centre-weighted
ISO range: 100-51200
Shutter speeds: 1/8000sec-30 seconds & Bulb
Continuous frame rate: Eight frames-per-second
LCD: 3in 1,040,000-dot tilting monitor
Storage: Dual-slot SD (SDHC/SDXC)
Size: 132.5x91.8x49.2mm
Weight: 507g (including battery and card)
Website: www.fujifilm.co.uk

YOU HAVE TO RESPECT how Fujifilm has approached the incredibly competitive interchangeable-lens camera market. Following on from developing its range of Nikon-based DSLRs, it diversified into making mirrorless models with an identity of their own. Its X-series, which started with the X-Pro1 in 2012, has developed an incredibly strong following amongst its users, as well as admiration from the general photographic community.

Unlike other camera systems, Fujifilm's X-series has two very distinct designs – one that follows the more standard mirrorless design and another that uses an innovative rangefinder set-up. Until recently this was the X-T1 and X-Pro2 respectively. The X-T2 is an update of the X-T1 that includes many of the features – including the sensor – of the X-Pro2, along with other improvements.

The X-T2 shares the looks and handling of its predecessor, which can only be a good thing. Its distinctive retro design looks fantastic and the large top-plate dials – a real throwback to SLRs from the '80s – offer a fast and enjoyable way to adjust exposure settings. The shutter speed dial and ISO dial both sport locks at their centres to prevent accidentally knocking them, while the exposure compensation dial has a C setting that switches control to the smaller input dials found on the camera's front and rear.

The camera body is constructed from magnesium-alloy and has 63 seals providing protection from dust and moisture. It feels robust and handles beautifully, but attach the optional grip with its additional controls (and extra batteries) and handling is even better.



Above: It might look like a 1980's 35mm SLR, but Fujifilm's latest retro-styled mirrorless marvel boasts cutting edge technology.

The electronic viewfinder on the X-T1 was excellent and the X-T2's is even better. It sports a 2.36-million dot OLED display with 0.77x magnification but is twice as bright and features a higher frame rate of 60fps, which can be boosted to 100fps to keep fast-moving subjects smooth in the frame.

The rear 3in LCD monitor has the same 1,040,000-dot screen as the X-T1, which means no touchscreen, but benefits from a clever double-hinged design allowing the screen to be tilted up and down, then with the flick of a switch, tilt it to the right, which is ideal when shooting in portrait format.

The camera boasts an extensive set of features so, as you'd expect, the body sports a fair number of controls. But Fujifilm has clearly worked hard to make the camera as accessible as possible for less experienced users. Sliding levers beneath the top-plate dials cover the shooting mode and metering, while a four-way control and toggle stick supplement the key function buttons and help make navigating the camera's key features easier and quicker.

The 24.3-megapixel APS-C X-Trans III CMOS sensor at the heart of the X-T2 has already proven itself as highly capable in the X-Pro2, and represents a big jump in resolution over the 16.1-million pixels of the X-T1. The standard ISO range is ISO 200-12800, expandable as low as ISO 100 and as high as ISO 51200. Unlike the X-Pro2, its capabilities have been enhanced to allow it to capture 4K, as well as Full HD video.

With the specification clearly aimed at advanced users, exposure modes are limited to the core four of program, aperture- and shutter-priority and manual, with none of the scene modes you'd find on models aimed at less experienced users.

The autofocus system is one area that has been greatly improved over the X-T1, with the hybrid AF system employing 169 points (13x13) in the central area of the frame, with two sets of 6x13 contrast-detection points on either side giving a total of 325 AF points across the frame. As well as a boost in AF points, the algorithms have been dramatically improved to offer far better focusing performance, in particular for tracking moving subjects. It even sports three different AF parameters – Tracking Sensitivity, Speed Tracking Sensitivity and Zone Area Switching – to handle how the camera reacts to moving subjects.

While the metering system hasn't seen the same level of revamp, it's still got plenty to offer, including four metering patterns (multi-zone, spot, centre-weighted and average) and a wealth of overrides.



Above: The X-T2 was rarely troubled, except during a morning outdoor shoot in cool light, which led to blueish tones.



Exposure: 1/4sec at f/4 (ISO 1000)



Exposure: 1/100sec at f/3.2 (ISO 640)



Exposure: 1/250sec at f/3.2 (ISO 640)

While picture styles aren't an area we normally highlight, it's worth mentioning Fuji's selection. Termed Film Simulation, the set-up allows you to base the characteristics of images on some of Fuji's most prized emulsions. So for vivid colours you'd choose Velvia, to give the vibrant effects of this classic slide film, for standard contrast and colour reproduction, Provia would be the choice, and so on.

With the AF system being improved with sports and wildlife photographers in mind, it's no surprise the X-T2 has a fast shooting rate. The standard rate is eight frames-per-second, but with the grip it can be boosted to 11fps. As mentioned earlier, the X-T2 has been primed for serious videography usage. It can shoot 4K UHD (3840x2160 pixels) at a bit rate of 100Mbps, offering recording times of up to ten minutes (or 29 minutes with the battery grip attached). The body features a HDMI port, audio volume live monitoring/adjustment and microphone socket. A headphone socket can be found on the grip.

Other features worth noting are a high level of customisation, dual SD card slots,

interval timer, Wi-Fi and a PC socket for direct connection to studioflash.

It doesn't take long at all to realise what a special picture-taking tool the X-T2 is. Firstly, it's a camera that's enjoyable to use – perhaps more so for my generation who mastered their skills using cameras with a similar control set-up. Some cameras are efficient but sterile, the Fuji is the former but certainly not the latter – it's fun taking pictures with and makes you want to head out to shoot just to be able to use it further.

Not only is it a joy to use, it's also very capable. The AF system is a marked

VERDICT

In terms of overall enjoyment, along with handling, features and performance, the X-T2 is arguably the best mirrorless model on the market and one of the best interchangeable-lens cameras. It ticks pretty much every box in terms of what you could want, and the system of lenses and accessories offers plenty of options. A brilliant camera.



X-SERIES LENSES & ACCESSORIES

Fujifilm has developed an excellent selection of over 20 lenses, with the XC line-up offering high quality optics at affordable prices, while the XF range boasts premium quality for the most discerning users. There are also three Zeiss Touit prime lenses available, a 1.4x teleconverter, Leica M-Mount adapter and macro extension tubes. Fuji has widened its range of flashguns and its latest model offers wireless TTL flash capabilities with the X-T2. The £300 VG-XT2 grip is an accessory every X-T2 user should consider, offering additional controls, power and improved handling. There is also a remote release, stereo microphone and other options like leather cases and filters.

CLOSEST RIVALS

● **OLYMPUS OM-DE-M1 MARK II:** Announced at Photokina 2016, this 20.4-million pixel Micro Four-Thirds model boasts five-axis stabilisation and an 18fps drive. Available this month, it will cost around £1,850 body-only.

● **SONY ALPHA 7 II:** This mirrorless marvel is a popular choice for shooting stills and movies and boasts a 24.3-megapixel full-frame sensor, Full HD video and body-integral stabilisation. It costs around £1,350 body-only.

● **CANON EOS 7D MARK II:** This superb £1,400 DSLR has a 20.2-megapixel APS-C sensor, Full HD video, dual DIGIC 6 processors and a wealth of features for enthusiasts and pros alike.

● **NIKON D610:** At £1,300, the D610 is one of the more affordable full-frame DSLRs, boasting a 24.3-megapixel resolution, Full HD video, EXPEED 3 processor and dual SD card slots.

Top: High ISO interior shot reveals the sensor's excellent range. **Above left & right:** The X-T2's speed means it's possible to work fast – as when stalking zombies through Peterborough centre.

improvement over the X-T1 and it's certainly better at tracking subjects – although you'll need to spend a little time working out the settings. Metering is consistent, although I had the odd hiccup with White Balance in late evening light shooting portraits with a reflector. Noise isn't an issue, with excellent results even at ISO 2000, while the dynamic range is one of the best noted with APS-C sensors. In fact, there is very little at all to fault with its performance.

Handling	19/20
Ease of use	18/20
Features	19/20
Performance	19/20
Value	18/20

Overall 93/100

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THINKING OF UPGRADING YOUR CAMERA OR INVESTING IN A NEW TOP-END MODEL? THEN YOU'RE SPOILT FOR CHOICE AS WE BRING YOU NINE OF THE BEST DSLRS AND MIRRORLESS MODELS OVER £1,000

IN LAST MONTH'S issue, our *Buyers' Guide* looked at nine budget cameras ranging from around £300 to just under £1,000. It revealed the variety of options available to you and how, for a relatively modest sum, you're able to buy an outfit capable of great results. If you missed it, we've summarised the four Best Buys in the panel below.

In this *Buyers' Guide*, we cover nine very different cameras ranging from enthusiast-level to pro-spec models. Whether you're thinking of upgrading your current camera, adding to your existing kit or simply want to invest in a top-notch model rather than a budget buy, we've a selection of some of the best cameras currently available.

As you'll soon discover, the choice is diverse and some of the price tags will bring tears to your eyes. At the lower end of the price band, models suit semi-pro to pro use, while at the top end are more specialised models that won't suit every type of user. Be sure you properly research a shortlist of your favourites and be certain it's suitable for your needs so that you avoid a very costly mistake.



BUDGET BUYS: LAST ISSUE'S TOP PICKS UNDER £1,000...



● Pentax K-S2

Pentax like to do things a little differently and this great budget buy comes in 120 colour combinations. It's the world's smallest dustproof and weather-resistant DSLR and boasts a strong set of features, including a 20.12-million pixel APS-C sensor, body-integral Shake Reduction, Wi-Fi, a 3in LCD monitor on a tilting platform and digital filters. All for well under £550.



● Fujifilm X-T10

Styled like a retro-DSLR, the X-T10 is not only an attractive camera, it's also one of the best value. This stripped-down version of the X-T1 boasts a 16.3-megapixel X-Trans II APS-C sensor powered by an EXR Processor II, a 3.2in tilting LCD monitor, Wi-Fi, built-in flash and Hybrid AF. General performance is excellent and you won't be disappointed by the image quality. A great budget buy.



● Nikon D7200

This update of the excellent D7100 is one of the very best APS-C DSLRs on the market. It features a 24.2-million pixel resolution, EXPEED 4 processor, 51-point AF system, Wi-Fi and a six frames-per-second drive. The layout is typical Nikon so it shouldn't take long to get to grips with its controls, and general handling is excellent. The D7200 is a great choice as an upgrade or first DSLR.



● Canon EOS 80D

This is a brilliant enthusiast-level DSLR packed with features. At its heart the EOS 80D has a 24.2-megapixel APS-C sensor that produces very high quality images as well as Full HD video. It boasts a responsive 45-point AF system and consistent metering, as well as features like Wi-Fi. It's a great all-round option with great handling and ease of use. One of the best models under £1,000.

Fujifilm X-Pro2

Street price: £1,349 (body-only)

Image sensor: APS-C X-Trans CMOS (23.6x15.6mm)

Image resolution: 24.3-megapixels

Size: 140.5x82.8x45.9mm

Website: www.fujifilm.co.uk

FUJIFILM'S HYBRID RANGEFINDER is one of two flagship models – the other is the new X-T2, tested on p108. This retro-styled model boasts a hybrid viewfinder that combines an optical and electronic viewfinder. It's unique and not to everyone's taste, but if you like shooting with a rangefinder, you'll love it.

The magnesium-alloy body feels tough enough to withstand a bullet, while the buttons are proud and dials well-sized. The controls are fast and easy to access too. A four-way control on the rear provides access to the majority of functions. Fuji has updated its menu system and the newer version is far easier to navigate.

At its heart is a 24.3-million pixel X-Trans CMOS III sensor with no Optical Low-Pass Filter for further sharpness, along with a new imaging engine, the X-Processor Pro.

Autofocus is handled by 77 AF-points that cover approximately 40% of the frame. There are also extensive options available to customise both AF and manual focusing.



As well as 256-zone metering, the Fuji offers spot, centre-weighted and average metering. The maximum frame rate of eight frames-per-second is impressive, Full HD video recording at 1080p60 is available, Wi-Fi is included, and there are two SD card slots. If you're a fan of in-camera effects, you'll find toy camera, miniature and soft focus effects within the filters menu.

As well as the excellent range of options, you'll find yourself immersed in taking pictures. Your happiness won't fade when you review your images, as the sensor delivers a very high level of detail, excellent colours and good contrast. Metering and White Balance systems are consistent, noise is well controlled (up to ISO 3200) and dynamic range is good. The AF system is quick and accurate too.

VERDICT

There was no doubt that the X-Pro2 would be a hit. The hybrid viewfinder is far better than expected and the camera's handling is excellent. Its range of features leaves you wanting for little and its performance won't disappoint either. What makes it stand out is that it's one of only a few cameras that has that special something that makes it truly enjoyable to use.

Handling/Ease of use	★★★★★
Features	★★★★☆
Performance	★★★★☆
Value for money	★★★★☆
Overall	★★★★★

Nikon D750

Street price: £1,650 (body-only)

Image sensor: Full-frame CMOS (35.9x24mm)

Image resolution: 24.3-megapixels

Size: 140x113x78mm

Website: www.nikon.co.uk

THE D800 AND D810 might have grabbed the lion's share of the headlines with Nikon full-frame fans, but the D750 is a highly capable model that should not be overlooked. It's relatively compact for a full-frame model and balances nicely in the hand, especially when paired with a small lens, such as a 50mm. It's a very durable model, with a tough, weather-sealed body that can handle shooting in harsh climatic conditions.

Despite its diminutive size, the files it produces are impressive. While it may lack the sheer resolution of its stablemate, image quality can't be faulted. The full-frame sensor delivers images with great clarity and colour. Notably, noise is handled very well and only becomes an issue at very high ISOs. Speaking of which there's a huge ISO range of 50-51200. Dynamic range is impressive too.

The D750's autofocus system is incredibly quick and accurate. Boasting 51 autofocus points with 15 cross-type



sensors, it's said to be a slightly tweaked version of the same system used in the D4S and D810. Coupled with the camera's 6.5fps burst rate, the D750 is a body that excels at capturing action.

Another big selling point of the Nikon D750 is its articulated screen, which allows for shooting at unusual angles and sports a 1,229,000-dot screen. The D750 also offers Wi-Fi, allowing for a smartphone to be used for LiveView or as a remote release. While it lacks 4K, video can be recorded in Full HD (1080p) at 50p/60p.

For those looking to try in-camera techniques, the D750 sports a number of options, including HDR, time-lapse and a range of special effects filters. Other features include dual SD slots and a multi-mode built-in flash.

VERDICT

When it comes to describing the D750, the magic word is 'balance'. Nikon really hit the sweet spot with this camera; it has pro-spec image quality and performance, mixed with the exquisite handling of a lightweight, compact body, some neat features and a reasonable price tag. Sure there are one or two niggles, but there's not really much to complain about!

Handling/Ease of use	★★★★☆
Features	★★★★☆
Performance	★★★★☆
Value for money	★★★★☆
Overall	★★★★☆

Nikon D500

Street price: £1,730 (body-only)

Image sensor: DX-format CMOS (23.5x15.7mm)

Image resolution: 20.9-megapixels

Size: 147x115x81mm

Website: www.nikon.co.uk

LAUNCHED ALONGSIDE THE new flagship professional Nikon D5, the D500 shares several features with its bigger, much more expensive sibling – namely the impressive EXPEED 5 processor, 153-point Multi-CAM 20K autofocus system, and its pixel count too. Aimed at advanced enthusiasts and professionals seeking a fast, light APS-C model and extra pulling power (thanks to the 1.5x crop factor), the 10fps D500 looks at long last to put Nikon in a position to take on the highly popular Canon EOS 7D Mk II.

The D500 sports a 20.9-megapixel sensor designed to the same high specification as the D5's, and the lower pixel count allows for greater low-light sensitivity – the ISO range is 100–51200, expandable to a staggering ISO 1.6 million!

The EXPEED 5 image processor brings with it an impressive 10fps continuous burst. The D500 features dual card slots; one SD, and one high-speed XQD slot, which allows you to shoot up to 200



14-bit lossless compressed Raw files in a single burst! The processor handles 4K UHD video too, although this feature is only possible in a 1.5x crop mode – that's on top of the APS-C crop, and equates to a 2.25x crop over a full-frame DSLR.

Autofocus performance is where the D500 shines. Of the 153 autofocus points, 99 are cross-type. AF is lightning fast and very reliable too. A 180,000-pixel RGB sensor handles metering and aids subject recognition for improved AF tracking.

The 3.2in LCD monitor has a touchscreen and sits on a tilting platform. Other features include Wi-Fi and NFC.

Results are very sharp, with great colour rendition, while dynamic range is excellent with detail retrievable in all but the brightest highlights and darkest shadows.

VERDICT

If you want the fastest Nikon you can buy, but don't want to move up to full-frame, then the D500 comes out on top by a sizeable margin. Landscape and portrait shooters may not feel the benefit, but action and wildlife aficionados will appreciate the AF performance. This is a well-built, high quality product offering flagship technology and performance.

Handling/Ease of use	★★★★★
Features	★★★★☆
Performance	★★★★★
Value for money	★★★★☆
Overall	★★★★★

Pentax K-1

Street price: £1,800 (body-only)

Image sensor: Full-frame CMOS (35.9x24mm)

Image resolution: 36.4-megapixels

Size: 110x136.5x85.5mm

Website: www.ricoh-imaging.co.uk

PENTAX'S FIRST FULL-FRAME DSLR is a chunky beast, sporting a premium weatherproof body. The camera handles like a dream, with the extra-large handgrip providing a secure hold and the pronounced buttons and tactile knobs helping to make the camera faster and easier to operate. The optical viewfinder is superb, providing a bright and sharp image at near-100% field-of-view. The 3.2in LCD is excellent, with a high resolution screen, a gapless resin layer design that reduces internal reflections and a flexible mount that allows the monitor to be used and locked in a wide variety of angles.

The main point of interest of the K-1 is undoubtedly the full-frame sensor. Its 36.4-million pixel resolution and lack of anti-aliasing filter means Pentax finally has a model to rival the Canons, Nikons and Sonys for resolution. One advantage it has over all other full-frame models is body-integral stabilisation, which is claimed to give up to five stops benefit.



File processing is handled by a PRIME IV imaging engine that allows full-frame images to be captured at up to 4.4 frames-per-second (6.5fps for cropped APS-C images), with an extensive ISO range from 100 to 204800. While the K-1 offers Full HD video, it lacks 4K recording.

The K-1 boasts 33 AF points, including 25 cross-type sensors, while the 86,000-pixel RGB metering sensor assesses the subject's shape, colour and movement to provide an accurate analysis of the scene. Other features include Wi-Fi, a built-in GPS module and digital filters.

Image quality is superb, especially if you shoot in Raw, with high levels of sharpness and an extremely wide dynamic range. AF is positive for static subjects, but struggles a little with tracking moving subjects.

VERDICT

Pentax kept its fans waiting for a full-frame DSLR and, in most areas, the K-1 doesn't disappoint. It's as rugged as they come and boasts a wide range of features, as well as some clever innovations. Its sensor is its biggest attraction and thankfully, it does deliver. With a competitive price tag, it's sure to gain admirers from outside the Pentax community, as well as from within.

Handling/Ease of use	★★★★☆
Features	★★★★☆
Performance	★★★★★
Value for money	★★★★☆
Overall	★★★★★

Nikon D810

Street price: £2,400 (body-only)

Image sensor: FX-format CMOS (35.9x24mm)

Image resolution: 36.3-megapixels

Size: 146x123x81.5mm

Website: www.nikon.co.uk

BASED ON THE best-selling D800, the D810 is a formidable beast. The 36.3-million pixel full-frame sensor is completely new and lacks an optical low-pass filter, so image sharpness should theoretically be even better than previous models. The sensitivity of the FX-format CMOS sensor has been improved, too, with a low native setting of ISO 64, (which can be reduced to ISO 32). Image quality should be even greater thanks to Nikon's EXPEED 4 image processor, which boasts new algorithms for cleaner, sharper images and improved colour reproduction. Another benefit is an increase in continuous shooting to five frames-per-second (7fps in DX mode).

Despite its large size it's comfortable to use for extended periods of time and balances beautifully with longer lenses. The chunky handgrip provides a firm hold, while the oversized, well-marked controls ensure the camera's many functions are fast and easy to select.



The viewfinder is large and bright, while the LCD monitor is also impressive, with a 1,229,000-dot 3.2in screen providing a sharp and accurate display. The D810's range of features is extensive and caters for all types of photographers. A full set of creative exposure modes is backed up by Nikon's ultra-reliable Matrix metering system (plus spot and centre-weighted). The 51-point AF system is the same as that found on the Nikon D4s, with the Multi-CAM 3500FX AF module working to provide fast and responsive autofocus. The D810 also looks after moviemakers too. Full HD movies can be recorded at 50p or 60p in both FX and DX modes, exposure control is extensive, as is audio control.

Image quality is incredible, with superb dynamic range, sharpness and colours.

VERDICT

While the list of differences between the D810 and its predecessors may not seem extensive, the improvements do add up to give slightly sharper results. D800/D800E users may not find the differences enough to justify upgrading to the D810, but for anyone else, the latest Nikon is a real temptation, giving extremely high-quality results in a fully-specified camera.

Handling/Ease of use	★★★★
Features	★★★★★
Performance	★★★★★
Value for money	★★★★
Overall	★★★★★

Canon EOS 5DS R

Street price: £3,000 (body-only)

Image sensor: Full-frame CMOS (24x36mm)

Image resolution: 50.6-megapixels

Size: 152x116x76.4mm

Website: www.canon.co.uk

THERE ARE TWO versions of the EOS 5DS – the 5DS and the 5DS R. Both cameras are exactly the same bar one feature – the 5DS R has a low-pass cancelling filter on the sensor.

In the flesh the EOS 5DS looks just like an EOS 5D Mk III and in practice it handles like one too, so immediately feels comfortable and familiar if you've a top-end EOS already. It has the same weatherproof magnesium alloy body; it takes the same battery; has the same shutter speed range, exposure modes and 61-point AF system. The menus and controls are also virtually identical.

The main difference is the leap in resolution, from 22.4-megapixels to 50.6-megapixels – more than double. The EOS 5DS also has dual DIGIC 6 processors to allow a decent shooting and burst rate despite the increased resolution (up to 510 Large JPEGs or 14 Raw files at 5fps with a UDMA CF card installed). The metering system of the EOS 5D Mk III is fantastic, but the 5DS goes a step further with its 150,000



pixel, 252-zone RGB+IR metering sensor, plus you can shoot Raw at reduced resolutions of 28- and 12.4-megapixels.

The EOS 5DS is quite large and feels substantial, but it's not over-heavy and it's very well balanced. The control layout is logical and the controls themselves are both a good size and accessible. The rear screen is big, bright and super-sharp, and so is the Intelligent Viewfinder II, which shows 100% of the image area.

The AF system is fantastic for a camera designed for general use, with a high level of customisation and fast, accurate performance. Image quality is stunning, with incredible levels of detail and vibrant, punchy colours. Images are crisp, punchy and the colours vibrant. Noise is well controlled and dynamic range is excellent.

VERDICT

The Canon EOS 5DS R is an incredible camera. Its ultra-high resolution requires careful usage to get the best from it, but use it right and the results are simply amazing. The sensor demands that you use premium glass to get the very best of it so if you're thinking of buying this camera, be sure you're ready to invest in a selection of the best optics too.

Handling/Ease of use	★★★★
Features	★★★★
Performance	★★★★★
Value for money	★★★★
Overall	★★★★★

Sony Alpha 7R II

Street price: £3,000 (body-only)

Image sensor: Full-frame BSI CMOS (35.9x24mm)

Image resolution: 42.4-megapixels

Size: 126.9x95.7x60.3mm

Website: www.sony.co.uk

THE ALPHA 7R II SPORTS a whopping 42.4-megapixel back illuminated full-frame sensor in its slim mirrorless body. The images that this camera is capable of are mind-bogglingly detailed, thanks in part to the in-body five-axis image stabilisation and lack of optical low-pass filter. The A7 family is highly regarded for its dynamic range, too, and the A7R II is no exception. The low-light ability of the A7S has been passed on to its bigger brother – the A7R II boasts a native ISO of 100–25600, expandable to ISO 50–102400. Files are usable up to ISO 1600 with noise creeping in from ISO 3200.

A new shutter mechanism is said to eliminate the shutter slap problems that the original A7R suffered from. There's also an electronic front shutter option to reduce vibrations further.

For video fans, the A7R II is a highly covetable item – you can record 4K video without the need for an external recorder, although you do need super-fast Class 10



UHS-3 cards. There's a Super 35 (APS-C) crop mode too – the resolution is so high that this output is in 4K as well.

In hand, the weather-proof A7R II is slightly bigger than its predecessor due to the in-body image stabilisation, but the body is still small and being made from magnesium, it's strong, light and has a premium feel. It's weather sealed too.

A 1,228,800-dot 3in LCD screen sits on a tilting platform, although most of your compositions will likely be made via the excellent OLED electronic viewfinder.

The AF system is impressive, with 399 phase-detection and 25 contrast-detection points, but can struggle a little with moving subjects. Image quality is excellent, with very high sharpness and incredible dynamic range.

VERDICT

This is the camera that the A7R should have been, with almost all of the original's problems addressed. The new sensor is incredible and image quality is second to none – packed with detail, great dynamic range and colour. The A7R II has its frustrations, but if you can get past these, and learn to love its controls, menus and quirks then you won't be disappointed.

Handling/Ease of use	★★★★
Features	★★★★
Performance	★★★★
Value for money	★★★★

Overall ★★★★★

Canon EOS-1D X MkII

Street price: £5,200 (body-only)

Image sensor: Full-frame CMOS (35.9x23.9mm)

Image resolution: 20.2-megapixels

Size: 158x167x82.6mm

Website: www.canon.co.uk

THIS IS CANON'S FLAGSHIP MODEL and is an update of the original EOS-1D X, launched in March 2012.

The full-frame CMOS sensor offers 20.2-million pixels as opposed to the 18-megapixels found on the original EOS-1D X. It's a fairly modest jump in resolution but those looking for higher pixel counts have a number of models in the EOS 5D-series to choose from. Instead, Canon has designed a camera that meets the needs of enthusiasts and professionals capturing wildlife, sports/action and news. Throughout the specification, speed is a priority. The AF system has been upgraded from the original and uses a 61-point system (with 21 cross-type sensors) with Dual Pixel CMOS AF for improved speed and reliability. It proves to be very fast and responsive. It's powered by a large lithium-ion cell that slips into the base and allows for shooting at up to 14fps. As well as a CompactFlash card slot, the Canon also has a CFast 2.0 card slot for faster transfers.



The camera's processing power is handled by Dual DIGIC 6+ processors, with another DIGIC 6 processor used to handle the 360,000-pixel metering sensor. It's powerful enough to allow for 4K shooting at up to 60p or Full HD at up to 120fp, which is ideal for slow motion video. The ISO range is 100–51200, which can be expanded from ISO 50 to ISO 409600.

The Canon sports a 3.2in LCD monitor with a high quality 1,062,000-dot screen but there's no touchscreen or tilt facility.

A 360,000-pixel RGB+IR sensor takes care of metering and does an excellent job, delivering consistent exposures.

Image sharpness is excellent while colour rendition is accurate. Noise is well handled, while dynamic range is wide. It delivers an excellent all-round performance.

VERDICT

The Canon EOS-1D X Mark II is not for everybody. If your photography demands the ultimate in speed, then this model, with its responsive AF and super-fast drive, could well be the ideal camera. It's more than capable of handling other subjects, but there are many other models that are more suitable at a fraction of the price. A camera for when speed matters most.

Handling/Ease of use	★★★★
Features	★★★★
Performance	★★★★
Value for money	★★★★

Overall ★★★★★

Nikon D5

Street price: £5,200 (XQD)/£5,400 (CF) (body-only)

Image sensor: Full-frame CMOS (35.9x23.9mm)

Image resolution: 20.8-megapixels

Size: 160x158.5x92mm

Website: www.nikon.co.uk

THIS NIKON FLAGSHIP is a workhorse built for action in all conditions and updates the highly-regarded D4s. It boasts a 20.8-megapixel full-frame sensor, which is up from 16.2-megapixels on the D4s. There are two versions available – a dual XQD-card version and a dual CompactFlash-card version. The much faster XQD version is the choice when ultimate speed is required, such as for wildlife and sports when shooting large sequences of Raw and/or JPEG images.

The D5 features a new autofocus system, with an impressive 153 focusing points, of which 99 are cross-type sensors. It also boasts a dedicated autofocus processor. The increase in cross-type focus points aids with AF accuracy across the frame, while the new AF system is sensitive to -3EV. There's an extensive choice of options to suit different types of user and moving subject, and it proves to be very responsive. It's no surprise the camera has been accepted so well by sports pros.



The D5 features a 180,000-pixel RGB sensor to handle exposure and offers Matrix, spot, highlight-weighted and centre-weighted metering. It proves to be very consistent, handling tricky lighting conditions with ease.

The specification is extensive. It can shoot at up to 12fps with AE/AF tracking, or up to 14fps with mirror lock-up. The 3.2in, 2,360,000-dot LCD monitor boasts a touchscreen facility – a first for a professional-grade Nikon. Video can be recorded in 4K/UHD, as well as Full HD.

There are no complaints with the image quality from the Nikon D5. Images boast superb sharpness, while noise is very well controlled. Colour reproduction and tonal rendition is excellent, as is dynamic range. The D5 is a superb all-round performer.



VERDICT

The Nikon D5 is a fantastic camera. The improved frame rate, clever autofocus system and high ISO performance makes it a highly capable tool. However, like the Canon EOS-1D X MkII, its main appeal is to photographers needing the ultimate in speed, such as for wildlife and action. For general photography, any number of other Nikon DSLRs are better suited.

Handling/Ease of use	★★★★
Features	★★★★☆
Performance	★★★★☆
Value for money	★★★★
Overall	★★★★☆

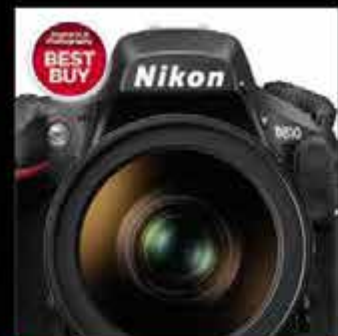
Conclusion: Which premium kit?

It wasn't easy narrowing down the dozens of great cameras over £1,000 to the nine that we've reviewed here. We've excluded several excellent options to present a selection that's as varied as possible in terms of type, features and performance. And while it might be perceived as something of a cliché, there isn't a bad model among them, so whichever you choose, you should be more than happy with it. Just be sure that you choose the camera that covers all of your needs.

There is very little between our Best Buys and Highly Rated models, in fact we could easily have given all the cameras reviewed here one of these accolades. The hybrid rangefinder of Fuji's X-Pro2 won't suit everyone, but is sure to satisfy the needs of those who enjoy shooting with this style of camera. Nikon has two models gaining the top award – the D810 is a phenomenal full-frame DSLR offering superb image quality and a wealth of features. The newer D500 is a brilliant DX-format DSLR for advanced photographers looking for a highly capable all-round performer. Our last Best Buy is Canon's incredible EOS 5DS R, which offers a resolution that was once the reserve of medium-format cameras. These models, along with our Highly Rated cameras, are among the very best DSLRs and mirrorless models available today. There is one other camera that should be added to your shortlist and that's Fuji's other flagship – the X-T2. As you'll see on page 108, it rates as one of the finest cameras we've tested in years.



FUJIX-PRO2



NIKON D810



NIKON D500



CANON EOS 5DS R

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Contact: www.johnsons-photopia.co.uk

ADDING MOTION TO time-lapses can take your videos to the next level – by moving the camera in tiny increments between frames you can create a smooth motion that appears to go against the rapid pace of the world around you. Once upon a time, motion control devices for time-lapse were expensive, complicated devices, and solely the reserve of the experts or big productions. Not any more, however.

Syrp offers the clever little Genie in two sizes – regular and Mini. While the full size Genie offers advanced features, and a choice of rotating motion or integration with cable camera systems, the Mini is a much more portable, and affordable piece of kit that fits neatly into your camera bag, and is my pick of the two. The Genie Mini is a motorised mount that can rotate your camera through 360°, as well as trigger your camera to capture a range of effects.

The Genie Mini sits between your tripod and camera and is controlled with a free smartphone app. Pair the Genie with your phone via Bluetooth and the app allows you to select whether you want to shoot time-lapse (using very small, slow movements), video (faster continuous movement) or a panorama. You can dictate the degree of rotation, by setting start and stop points, which the Genie Mini previews for you by rotating the camera around quickly to that point. What's more, the



Genie Mini links into your DSLR or mirrorless camera using a remote lead (not supplied), so it can also be programmed to trigger your camera at the right moments using its built-in intervalometer. You simply use the app to set the time-lapse interval and either duration of shooting, or desired length of clip, and it adjusts the speed of motion to suit the angle you set and the length of the time-lapse – very clever! In Panorama mode, the Genie allows you to take perfect panoramic images by rotating the camera, stopping and firing the shutter – you simply set it off and it does it all for you. There are also additional features, such as ramp-in or ramp-out when shooting time-lapse or video, HDR mode, and the Mini can even interact with the full-fat Genie for two axis movement.

The Genie Mini is charged by USB, and is compatible with most cameras, however if you're only using the rotate functions and triggering the camera yourself, then it'll work with anything, including action cameras such as GoPros, or even smartphones! What's more, it's barely bigger than a lens, so will fit into your camera bag without hassle.

If I had to find fault with the Genie Mini then I think the motor noise is a bit on the loud side, but this is only noticeable if you're shooting video and rotating quickly. This could be worked around by mounting the microphone elsewhere for the scene.

LumeJet prints

Online printing service / Variety of sizes and print finishes / Uses Fujifilm media and chemicals

Test: DANIEL LEZANO

Prices: Starts at under £5, plus p&p

Contact: www.lumejet.com

ALTHOUGH DIGITAL photography allows more people to take a greater number of pictures than ever before, less are producing prints from their favourite images. This is despite the fact that inkjet printers are affordable, easy to use and produce high quality results. For many, prints are reserved for their very favourite images, or as gifts, and are normally produced at their local high street lab or via popular online services such as Photobox.

LumeJet is a relative newcomer to online printing and aims to offer premium quality prints and products. This explains why its website has a more pragmatic 'pro' feel, as opposed to the 'fun and friendly' options from the likes of Photobox. Signing up for the service is easy, but navigating through the options, while fairly straightforward, could be made a little easier and more user-friendly.

The range of options and sizes is extensive, from various panoramics to square and more common print formats. The choice of finishes is good too, with Fujifilm's excellent Crystal Archive prints available in matte, gloss, lustre and silk.

The prices are slightly more expensive than you'll find with more popular services but that's due to the superior materials used, and because every print is inspected before being shipped. I was impressed by the print quality from the orders I've placed – tonal rendition and sharpness is excellent, while grain or artefacts aren't evident. The speed of service and packaging was very good too, with prints returned within a week.



VERDICT

If you want to add a touch of class to your time-lapses, or interesting motion to videos then the Syrp Genie Mini is a very impressive bit of kit. Clever, portable and easy to use – highly recommended.



Overall

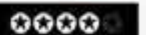


VERDICT

While mass-market online and high street printers have their place, when you want to show off the quality of your images in print, then consider giving LumeJet's online service a try.



Overall



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SONY

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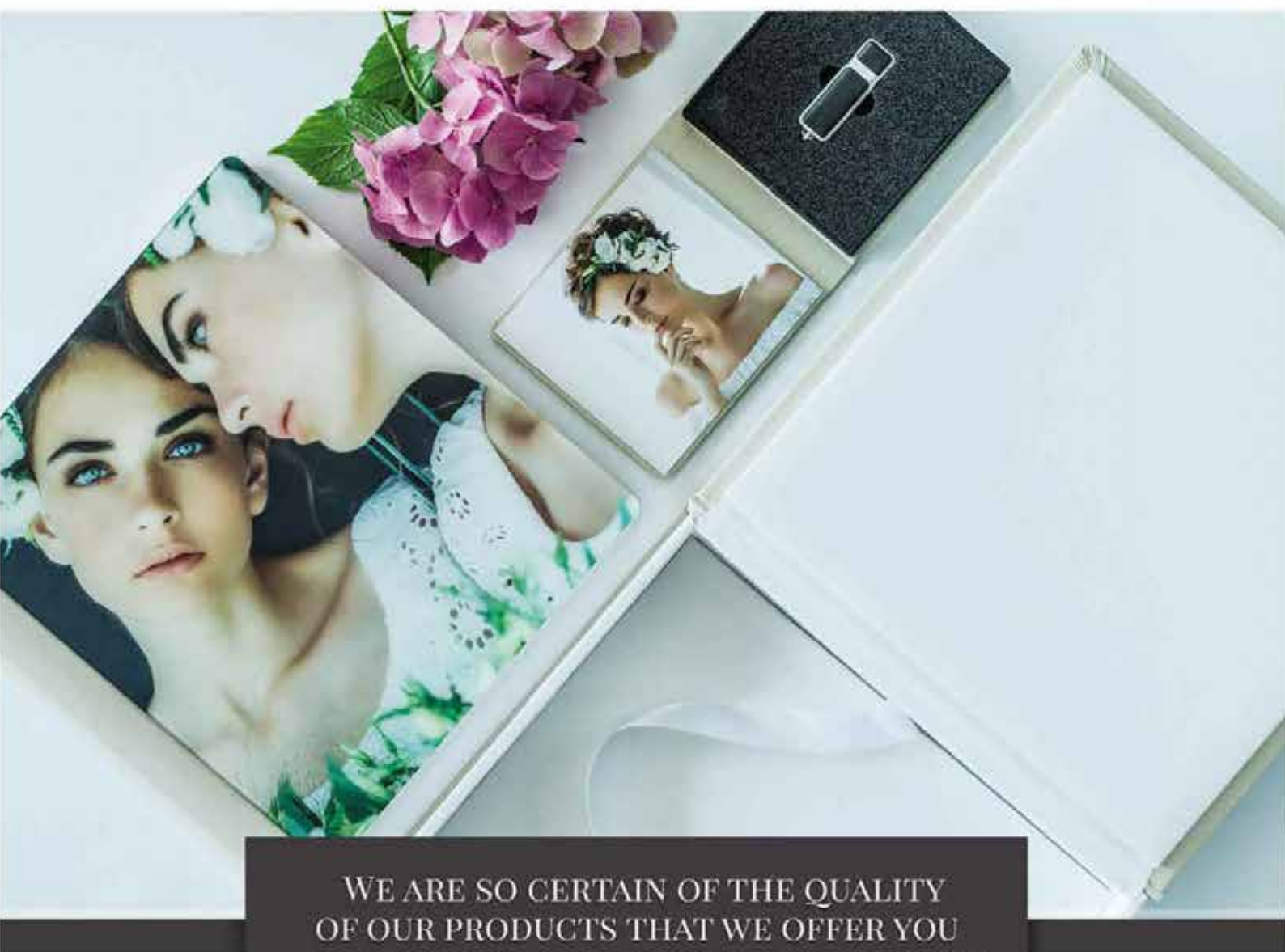
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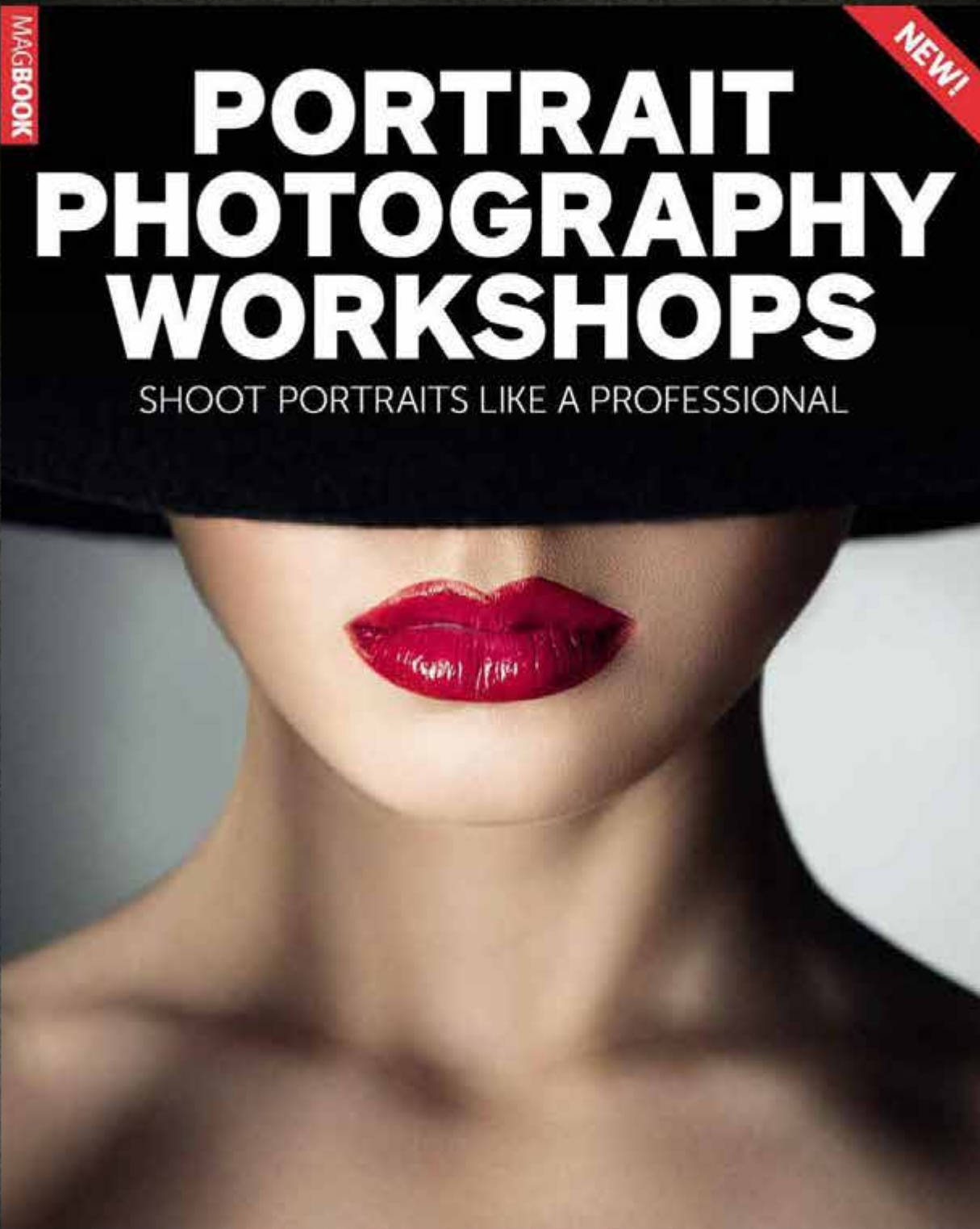
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Monthly Workshops. Book now:
www.weeklyimogen.com

Subscribe to **WeeklyImogen** - the world's largest
female presented photography YouTube channel

WeeklyImogen photography workshops guide you through an outdoor natural light shoot and give you the opportunity to develop your skills shooting a model on location. Each workshop gives participants the chance to work with Imogen as model and Mark, who guides participants through each photo opportunity, whilst still allowing space to try out and explore individual ideas.

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MAGBOOK

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TAKE AMAZING IMAGES AND IMPROVE YOUR PHOTO SKILLS



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SOCIETY

ONE OF MANY REASONS TO JOIN THE RPS

ACHIEVE A DISTINCTION

- Improve your photography
- Use letters after your name
- Provide clients with confidence
- Internationally recognised



How the Distinctions process works

- 1 Create a specific panel of work 10 – 21 images
- 2 Receive advice to improve your panel
- 3 Submit your panel for professional appraisal to become a Licentiate (LRPS), Associate (ARPS) or Fellow (FRPS) of the Royal Photographic Society

Discover all the membership benefits at
rps.org/join-us

PHILIP FIELD ARPS
Professional sports photographer

As a professional sports photographer, being recognised as both a member and Associate (ARPS) of the Royal Photographic Society provides my clients with an extra level of confidence when booking me.





Model & Creative Workshops - 12h Tuition - Photography Courses

TipTop Photo-Training have been running training courses and workshops for over 5 yrs and have presented everything from themed events through to working with international models and workshops. The aim is simple - we provide the location, the model and the technical support for you to produce fantastic images to add to your photographic portfolio

We are always keen to encourage photographers of all levels to attend the workshops. They are an ideal place for beginners as you get to know your camera and learn from the more experienced photographers. Equally we have many more experienced people attend mainly because they get to work with top models at a fraction of the cost it would be to book them privately

Why not join us - www.tiptop-photographystudio.com

Some of our workshops have include:



'This was without doubt the best course I have been on. I learnt more in one afternoon about photography than I have done in the last 30 years reading magazines!'



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KOOD UV Broadband Multicoated Filters - Broadband range is 450nm - 650nm. Extraordinarily slim, under 2mm, double threaded to accept other screw on items. Ideal for avoiding vignette on all lenses that are Zoom to wide angle. Available in 40.5, 49, 52, 55, 58, 62, 67, 72, 82 and 86mm



Green Water 58mm
Green Water 62mm
Green Water 67mm
Green Water 72mm

FILTERS MADE ON A MERCURY BED MADE IN JAPAN

24mm	46mm
25mm	48mm
27mm	49mm
28mm	52mm
30mm	55mm
30.5mm	58mm
34mm	62mm
35.5mm	67mm
37mm	72mm
37.5mm	77mm
39mm	82mm
40.5mm	86mm
43mm	

4mm slim ring UV

Skylight 18 37mm
Skylight 18 40.5mm
Skylight 18 43mm
Skylight 18 46mm
Skylight 18 48mm
Skylight 18 49mm
Skylight 18 52mm
Skylight 18 55mm
Skylight 18 58mm
Skylight 18 62mm
Skylight 18 67mm
Skylight 18 72mm
Skylight 18 77mm
Skylight 18 82mm

OPTICAL FILTER GROUND GLASS

Skylight 24mm
Skylight 25mm
Skylight 27mm
Skylight 28mm
Skylight 30mm
Skylight 30.5mm
Skylight 34mm
Skylight 35.5mm
Skylight 37mm
Skylight 37.5mm
Skylight 40.5mm
Skylight 43mm
Skylight 46mm
Skylight 48mm
Skylight 49mm
Skylight 52mm
Skylight 55mm
Skylight 58mm
Skylight 62mm
Skylight 67mm
Skylight 72mm
Skylight 77mm
Skylight 82mm
Skylight 86mm
Skylight 105mm

For water without Coral

Green Water 100mmx100mm
Green Water 104mm Disc
Green Water 125mmx125mm
Green Water 27mm
Green Water 30mm
Green Water 30.5mm
Green Water 34mm
Green Water 37mm
Green Water 37.5mm
Green Water 40.5mm
Green Water 43mm
Green Water 46mm
Green Water 49mm
Green Water 52mm
Green Water 55mm

Underwater Filters Blue water for water with Coral

Blue Water 100mmx100mm
Blue Water 104mm Disc
Blue Water 125mmx125mm
Blue Water 27mm
Blue Water 30mm
Blue Water 30.5mm
Blue Water 34mm
Blue Water 37mm
Blue Water 37.5mm
Blue Water 40.5mm
Blue Water 43mm
Blue Water 46mm
Blue Water 49mm
Blue Water 52mm
Blue Water 55mm

UK OPTICAL RESIN MADE IN UK

Blue Water 100mmx100mm
Blue Water 104mm Disc
Blue Water 125mmx125mm
Blue Water 27mm
Blue Water 30mm
Blue Water 30.5mm
Blue Water 34mm
Blue Water 37mm
Blue Water 37.5mm
Blue Water 40.5mm
Blue Water 43mm
Blue Water 46mm
Blue Water 49mm
Blue Water 52mm
Blue Water 55mm

Optical Glass Filters (no colouration)

ND8 - 3 stops - optical glass	
46mm	67mm
49mm	72mm
52mm	77mm
55mm	82mm
58mm	86mm
62mm	

Opt. GROUND GLASS

Infra Red 49mm
Infra Red 52mm
Infra Red 55mm
Infra Red 58mm
Infra Red 62mm
Infra Red 67mm
Infra Red 72mm
Infra Red 77mm
Infra Red 82mm

Opt. GROUND GLASS 2 STOPS

ND4 27mm
ND4 28mm
ND4 30.5mm
ND4 34mm
ND4 37mm
ND4 37.5mm
ND4 40.5mm
ND4 43mm
ND4 46mm
ND4 49mm
ND4 52mm
ND4 55mm
ND4 58mm
ND4 62mm
ND4 67mm
ND4 72mm
ND4 77mm

THREE STOP

ND8 37mm
ND8 40.5mm
ND8 46mm
ND8 49mm
ND8 52mm
ND8 55mm
ND8 58mm
ND8 62mm
ND8 67mm
ND8 72mm
ND8 77mm

4 STOPS

ND16 46mm
ND16 52mm
ND16 55mm
ND16 58mm
ND16 62mm
ND16 67mm
ND16 72mm
ND16 77mm
ND16 82mm

Opt. GROUND GLASS 9 STOPS

ND 400 52mm
ND 400 58mm
ND 400 62mm
ND 400 67mm
ND 400 72mm
ND 400 77mm
ND 400 82mm

Opt. GROUND

Polariser Linear 39mm
Polariser Linear 43mm
Polariser Linear 46mm
Polariser Linear 52mm
Polariser Linear 55mm
Polariser Linear 58mm
Polariser Linear 62mm
Polariser Linear 67mm
Polariser Linear 72mm
Polariser Linear 77mm
Polariser Linear 82mm
Polariser Linear 86mm
Polariser Circular 25mm
Polariser Circular 25.5mm
Polariser Circular 27mm
Polariser Circular 28mm
Polariser Circular 30mm
Polariser Circular 30.5mm
Polariser Circular 34mm
Polariser Circular 35.5mm
Polariser Circular 37mm
Polariser Circular 37.5mm
Polariser Circular 40.5mm
Polariser Circular 43mm

Starburst 6X 77mm

Starburst 6X 77mm
Starburst 8X 37mm
Starburst 8X 49mm
Starburst 8X 52mm
Starburst 8X 55mm
Starburst 8X 58mm
Starburst 8X 62mm
Starburst 8X 67mm
Starburst 8X 72mm
Starburst 8X 77mm

Orange 2x 62mm

Orange 2x 62mm
Orange 2x 67mm
Orange 2x 72mm
Orange 2x 77mm
Orange 2x 82mm
Orange 2x 86mm

TWO STOPS

Green 2x 49mm
Green 2x 52mm
Green 2x 55mm
Green 2x 58mm
Green 2x 62mm
Green 2x 67mm
Green 2x 72mm
Green 2x 77mm
Green 2x 82mm
Green 2x 86mm

THREE STOP

Red 2x 46mm
Red 2x 49mm
Red 2x 52mm
Red 2x 55mm
Red 2x 58mm
Red 2x 62mm
Red 2x 67mm
Red 2x 72mm
Red 2x 77mm
Red 2x 82mm
Red 2x 86mm

Conversion Filters

We are unable to replace these with Japanese filters - replacements will be UK Optical resin filters.

JAPANESE OPTICAL GLASS

80A 52mm	82B 67mm
80A 55mm	82B 72mm
80A 58mm	85A 49mm
80A 62mm	85A 52mm
80A 67mm	85A 55mm
80A 72mm	85A 58mm
80B 49mm	85A 62mm
80B 52mm	85A 67mm
80B 55mm	85A 72mm
80B 58mm	85B 49mm
80B 62mm	85B 52mm
80B 67mm	85B 55mm
80B 72mm	85B 58mm
80B 77mm	85B 62mm
81A 72mm	85B 67mm
81B 55mm	85B 72mm
81B 67mm	85B 77mm
82A 49mm	85B 82mm
82A 52mm	85B 87mm
82A 55mm	85B 92mm
82A 58mm	85B 97mm
82A 62mm	85B 102mm
82A 67mm	85B 107mm
82A 72mm	85B 112mm
82B 49mm	85B 117mm
82B 52mm	85B 122mm
82B 55mm	85B 127mm
82B 58mm	85B 132mm
82B 62mm	85B 137mm

Colours for B&W Ground optical glass

Yellow 2x 46mm
Yellow 2x 49mm
Yellow 2x 52mm
Yellow 2x 55mm
Yellow 2x 58mm
Yellow 2x 62mm
Yellow 2x 67mm
Yellow 2x 72mm
Yellow 2x 77mm
Yellow 2x 82mm
Yellow 2x 86mm

ONE STOP

Y/G 2x 49mm Yellow Green
Y/G 2x 52mm
Y/G 2x 55mm
Y/G 2x 58mm
Y/G 2x 62mm
Y/G 2x 67mm
Y/G 2x 72mm

ONE AND ONE THIRD STOP

Orange 2x 46mm
Orange 2x 49mm
Orange 2x 52mm
Orange 2x 55mm
Orange 2x 58mm

KOOD

CAN BE ORDERED FROM ANY INDEPENDENT RETAILER

KOOD International Limited, Unit 6, Wellington Road, London Colney AL2 1EY

Tel: 01727 823812 Fax: 01727 823336

E-mail: info@koodinternational.com / koodinternational@gmail.com

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TRADE AND IMPORTERS CAN PAY BY

KOOD

HIGH DEFINITION GRADIENTS FOR HIGH PIXEL COUNT SLR CAMERAS

- 1) KOOD uses small untoughend, thick Pilkington Optical Glass Mold's to produce the highest possible optically flat resin Filters without curvature to ensure infinity focus
- 2) Casting system eliminates all bleach so no loss of density or colour over time
- 3) Batch tested every 12 filters to maintain good neutrality
- 4) All filters packed in between card, in wallets which allow no movement or dust
- 5) KOOD Manufactures its own filters from casting to packing

A FILTER TO FIT ALL COKIN A SIZE SYSTEMS



A Filter Holder Set Adapter Rings Only Fit Kood Holder

A Filter Holder Cap
A Filter Holder Hood
A Adapter Ring 37mm
A Adapter Ring 38.1mm
A Adapter Ring 40.5mm
A Adapter Ring 46mm
A Adapter Ring 49mm
A Adapter Ring 52mm
A Adapter Ring 55mm
A Adapter Ring 58mm
A Adapter Ring 62mm

GRADIENTS

0.3 ND Gradient Soft
0.3 ND Gradient Hard Cut
0.6 ND Gradient Soft
0.6 ND Gradient Hard Cut
0.9 ND Gradient Soft
0.9 ND Gradient Hard Cut
Light Blue Graduated
Dark Blue Graduated
Cool Blue Gradient
Light Green Graduated
Dark Green Graduated
Light Mauve Graduated
Dark Mauve Graduated
Light Red Graduated
Dark Red Graduated
Light Tobacco Graduated
Dark Tobacco Graduated
Light Fog Graduated
Strong Fog Graduated
Light Yellow Graduated
Dark Yellow Graduated
Light Sunset Graduated
Dark Sunset Graduated

POLARIZERS

Linear Polariser Filter
Circular Polariser Filter

NEUTRAL DENSITY

Neutral Density 2
Neutral Density 4
Neutral Density 8

STARS AND DIFFRACTIONS

Star x 4
Star x 6
Star x 6 with centre spot
Star x 8
Diffraction 2x
Diffraction 36x
Diffraction 4x
Diffraction Star 4
Diffraction Star 8
Diffraction Square
Diffraction Halo

CLOSE UP'S

Close Up 1
Close Up 2
Close Up 4
Split Field

MULTI IMAGE AND SPEED

Multi Image 3
Multi Image 5
Multi Image 7
Speed

COLOURS

20 x Polyester colour set
Yellow
Orange
Green
Red
Sepia
Sky

CONVERSION

20 x Wratten polyesters set

80A
80B
80C
81A
81B
81C
82A
82B
82C
85A
85B
85C
FLB
FLD
FLW



DOUBLE EXPOSURE AND MASKS

A Double Exposure
A Double Mask 1
A Double Mask 2
A PSF



DIFFUSERS AND FOGS

A light Diffuser
A Strong Diffuser
A Fog 1
A Fog 2

NETS

Net Blue
Net Grey
Net Green
Net Orange
Net Red
Net Violet
Net White



SPOTS

Oval Spot Blue
Oval Spot Clear
Oval Spot Grey
Oval Spot Red
Oval Spot White
Spot Blue
Spot Clear
Spot Grey
Spot Green
Spot Orange
Spot Red
Spot Violet
Spot White
Wide Spot Blue
Wide Spot Clear
Wide Spot Grey
Wide Spot Green
Wide Spot Orange
Wide Spot Red
Wide Spot Violet
Wide Spot White



P SYSTEM TO FIT ALL COKIN P SIZE SYSTEMS

P Size Holder Kood Adaptor Filter Rings + Cokin Holders

P Adapter Ring 38.1mm
P Adapter Ring 49mm
P Adapter Ring 52mm
P Adapter Ring 55mm
P Adapter Ring 58mm
P Adapter Ring 62mm
P Adapter Ring 67mm
P Adapter Ring 72mm
P Adapter Ring 77mm
P Adapter Ring 82mm



GRADIENTS

0.3 ND Gradient Soft
0.3 ND Gradient Hard Cut
0.6 ND Gradient Soft
0.6 ND Gradient Hard Cut
0.9 ND Gradient Soft
0.9 ND Gradient Hard Cut
Light Blue Graduated
Dark Blue Graduated
Cool Blue Graduated
Light Green Graduated
Dark Green Graduated
Light Grey Graduated

Light Mauve Graduated
Dark Mauve Graduated
Light Red Graduated
Dark Red Graduated
Light Tobacco Graduated
Dark tobacco Graduated
Light Yellow Graduated
Dark Yellow Graduated
Light Sunset Graduated
Dark Sunset Graduated

POLARIZERS

Linear Polariser
Circular Polariser

NEUTRAL DENSITY

ND400 9 Stops (Japanese Glass)
available Round (Back Slot) Square
(for use with PL, star etc)
ND16 4 Stops (Japanese Glass)
Neutral Density x2
Neutral Density x4
Neutral Density x8
Neutral Density x8 (Glass)

INFRA RED 720 P FILTER

Infra Red 720 Optical Glass

STARS AND DIFFRACTIONS

Starburst x4
Starburst x6
Starburst x8
Diffraction 2x
Diffraction 36x
Diffraction Double Halo
Diffraction Halo
Diffraction 4x Star
Diffraction Filter DS8
Diffraction Square



CLOSE UP FILTERS

Close up +1
Close up +2
Close up +4
Split Field

COLOURS

Yellow
Orange
Green
Red
Skylight
Sepia



DIFFUSERS AND FOGS

Light Diffuser
Strong Diffuser
Light Fog
Strong Fog

CONVERSION FILTERS

80A
80B
80C
81A
81B
81C
82A
82B
82C
85A
85B
85C
FLD
FLW
FLB



DOUBLE EXPOSURE

Double Exposure
Solar Eclipse Filter

SPOTS

Blue Clear Spot
Clear Spot
Green Clear Centre Spot
Grey Clear Spot
Orange Clear Spot
Clear Oval Spot
Grey Oval Spot
White Oval Spot
Red Clear Spot
Violet Clear Spot
White Clear Spot



Z 100 MM FILTERS GRADIENTS 100 X 125MM

0.3 ND Gradient Soft
0.3 ND Gradient Hard Cut
0.6 ND Gradient Soft
0.6 ND Gradient Hard Cut
0.9 ND Gradient Soft
0.9 ND Gradient Hard Cut
Light Blue Graduated
Dark Blue Graduated
Light Green Graduated
Dark Green Graduated
Light Tobacco Graduated
Dark tobacco Graduated
Light Sunset Graduated
Dark Sunset Graduated



NEUTRAL DENSITY

Neutral Density 2
Neutral Density 4

DIFFUSERS AND FOGS

Diffuser Light
Diffuser Strong
Fog 1
Fog 2

COLOURS

Yellow
Orange
Red
Green
Sepia
Skylight



CONVERSION FILTERS

80A
80B
80C
81A
81B
81C
82A
82B
82C
85A
85B
85C
FLB

Spot Clear
Spot Oval
Spot White



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Back Caps

Canon AF
Canon FD
M42 screw
Sony/Min AF
Sony NEX
Minolta MD
Nikon
Olympus OM
Olympus 4/3
Olympus m 4/3
Pentax K
Yashica/Contax
Fuji X
Leica R
Leica M
Leica CR
Samsung NX



Body Caps

Canon AF
Canon FD
M42 screw
Sony/Min AF
Sony NEX
Minolta MD
Nikon
Olympus OM
Olympus 4/3
Olympus M4/3
Pentax K
Contax/Yashica

Adapters

Camera - Lens Adapters
Can AF - FD
Can AF - M42
Can AF - Nikon
Can FD - M42
Oly M4/3 - Can AF (With aperture ring)
Oly M4/3 - Nikon
Oly M4/3 - Nikon (With aperture ring)
Oly M4/3 - Leica M
Sony/Min AF - M42
Sony/Min AF - M42
Minolta MD - M42
Nikon - M42
Pentax K - M42
Sony NEX - Can AF
Sony NEX - Sony/Min AF
Sony NEX - Nikon AF
Sony NEX - Nikon AF and G
Sony NEX - PK
Sony NEX - Leica M
Sony NEX - Can AF with aperture ring
Yashica/Contax M42

C Mounts

Canon AF
Canon FD
M42
Nikon
Olympus OM
C Mount - Oly 4/3
C Mount - Oly Micro 4/3
Pentax K
T2 Thread
Sony NEX
Can AF

T2 Adapters

Can AF
Can FD
Konica
Nikon
Olympus OM
Olympus AF
Olympus 4/3
Oly Micro 4/3
Praktica B
Sony/Min AF
Minolta MD
Pentax K
Yashica Contax
Yashica Contax AF

Series 7

37mm
40mm
49mm
52mm
55mm
58mm
62mm
67mm



Reversing Rings

Can AF 52mm
Can AF 58mm
Can FD 52mm
Can FD 55mm
Yash/Cont 52mm
M42 49mm
M42 52mm
M42 55mm
M42 58mm
Min MD 49mm
Min MD 52mm
Min MD 58mm
Sony/Min AF 55
Nikon 52mm
Nikon 58mm
Praktica B 49mm
Pentax K 49mm
Pentax K 52mm
Pentax K 55mm
Pentax K 58mm

Camera Viewing accessories

Screen Hoods
Canon 500
Canon 3500
Canon 4500
Nikon D70
Nikon D80
Nikon D300
Full shield magnifying Screen Hoods
Canon 50/70/5000
Canon 3500/Nikon 5000
Canon 600/6000
Eye Caps
Canon 3500 type
Nikon D300 type
Chinon
Fujica
Nikon F type
Praktica
Pentax Right Angle Viewer

Shutter Release Items

10" Metal Cable Release
18" Metal Cable release
24" Metal Cable release
36" Metal Cable release
10" Vinyl Cable release
18" Vinyl Cable release
20" Vinyl Cable release
30" Vinyl Cable release
20" Air release



Camera Care Items

Medium Hurricane Blower
Large Blower Brush
Medium Blower Brush
Small Blower brush
Upstick lens brush
Lens Tissues
Small Micro Fibre (lens cloth)
Large Micro Fibre (lens cloth)
Lens Cleaning Solution
4 Piece Cleaning set
7 Piece Cleaning Set (in White Snap Box)
2 x Silica Gel
4 x Silica Gel
3 x Digital Screen Protect (squeeze and clearing)
Contact Cleaning Pen
Red Eye Pen

Camera Sling Strap

Concealed Wire, tripod
Bush attach strap
Double concealed wire strap
Wrist strap bush fitting

Comfort Straps

Backing, reverse quick release
Catches Makes hand strap
Black
Royal Blue
For Canon
For Nikon
For Minolta
For Minolta
For Pentax
For Olympus

30mm-38mm Wide Straps

Plain Black, embossed
For Canon, embossed
For Nikon, embossed
For Minolta, embossed
For Olympus, embossed
For Pentax, embossed
Hand Grip with Camera Platform
Narrow black strap 25mm



Loop Fitting Strap

Metallic Neck Strap
Metallic Wrist Strap

Rain Covers

Basic Rain Cover
Large
Medium
Summer
Winter



Dark Room

16"x17" Changing Bag
27"x29" Changing Bag#
3"x45" Changing Bag
10 piece Film Dev Kit
14 Piece film and print Dev Kit
Dark Room Apron
Straight Tank Thermometer
25mm Dial thermometer
45mm Dial thermometer
2 X5/Steel film Clips
3 x Bamboo Print Tongs
Print/film squiggle
Univ Dev Tank 2 x Spools
35mm Dev Tank
Spare Univ Spiral
3 x 7"x10" Dev Trays
3 x 12"x10" Dev Trays
3 x 12"x16 Dev Trays
3 x 16"x20" Dev Trays
3 x 16"x20" Dev Trays



Graduated Beakers with Handle

500cc
100cc
2000cc
Graduated H/Duty Measures
50cc
100cc
250cc
300cc
650cc
1000cc

Safelights free standing Or wall fixing

Yellow
Green
Orange
Red

Flash Accessories

Inverted cone attachment
give soft daylight result for

Canon 420EX
Canon 580EX
Canon 360EX
Nikon SB 600
Nikon SB 900
Diffusers
Canon 380EX
Canon 420EX
Canon 430EX
Canon 540EX
Canon 550EX
Canon 580EX
Canon 600ES
Nikon SB600
Nikon SB800
Nikon SB900
For v Pop up Flash
Soft Flash Elasticated Cover

Flash Brackets

Straight Flash Bracket
Angle Flash Bracket
Pro Bracket 1
Pro Bracket 2
Pro Bracket 3
Pro Bracket 5
Pro Bracket 5
Hot Shoe Co solid
Hot shoe with lead
Flash Slave Unit
Flash Slave Unit with Sucker
Flash Slave Nikon TTL



Flash Leads Pc Pc

0.5m Straight
1m Straight
2m Straight
3m Straight
5m Straight
10m Straight
3m Coiled
5m Coiled



Flash Leads PC-two pin AC

0.5m straight
1m straight
2m straight
3m straight
5m straight

Film Items

Film Cassette
100 x super 8 splicing tape
Super 8 Tape Splicer
35mm Plastic reloadable
Cassettes
Film Cassette Opener
Bulk Film loader
Attaché case 5 x 50 cm mag
Attaché Case up to 600 slides
APS Film Case
Daylight Slide Viewer
3 x Mag Slide Viewer
2 X Mag Slide Viewer
Auto Slide Viewer
5"x4" Slide Sorter
6"x10" Slide Sorter
Box of 6 Acrylic Slide panels
Twin 50 Dm Mag
Twin 50 CS Mag
Harimex Rondel Mag
Harimex Straight
Kodak Carousel c/w lid



Filter Accessories/Rings

2x Filter Wrench 48 - 58mm
2x Filter Wrench 62 - 77mm
Folding Filtr Pouch 4 x - 80mm
Folding Filtr Pouch 9 x - 67mm
Folding Filtr Pouch 9 x - 67mm

Filter Rings with Ret also can be used as distance rings - black

25.5mm
27mm
28mm
30mm
30.5mm
34mm
35.5mm
37mm
37.5mm
40.5mm
43mm
46mm
48mm
49mm
52mm
55mm
58mm
62mm
62mm deep
67mm
72mm
72mm deep
77mm
82mm
86mm
95mm
105mm
127mm



Filter Ring rotating c/w retainer

46mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm
82mm
86mm



Lens Hood

Collapsible rubber

40.5mm
43mm
46mm
49mm
52mm



Wide Angle

49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



Combi Two stage WA - Tele

49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



Non Collapsible Lens Hood

Petal Hood Screw fit can be Rotated to centralise

49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



Metal

27mm
28mm
30mm
30.5mm
34mm
37mm
40.5mm
43mm
46mm
48mm
49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



Leica type Metal Hoods

37mm
39mm
40.5mm
43mm
46mm
49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



Snap Caps

27mm
28mm
30/30.5mm
34mm
37mm
40.5mm
43mm
46mm
48mm
49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



With center grips

49mm
52mm
55mm
58mm
62mm
67mm
72mm
77mm



White Balance Snap Caps

52mm
55mm
58mm
62mm
67mm
72mm
77mm
82mm



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Cheetahs, Lions, Foxes, Birds of Prey, Cambs. £129

April 8th; Privileged access to Cheetahs, Malayan Tigers, White Tiger & Corsac Foxes. The Cheetah & Tiger enclosures are not mowed for enhanced photographic opportunities. Private Displays by various Birds of Prey, both static & flying. Jesses hidden for static shots. Barn Owl, Eagle Owl and Red-Tailed Hawk etc.

Amazing Bat Photos & Learn Fill-in Flash Techniques £139

April 7th; Oxfordshire. Take amazing bat photos, plus learn how to use balanced fill-in flash on wildlife subjects in different lighting conditions. Max 4 persons. Free loan of Canon digital camera and flash if req'd.

Big Cats at WHF, Smarden in Kent £155

April 1st, 22nd; Up close to African Lions, Bengal + Siberian + Sumatran Tigers, Servals, Cheetahs, Pumas, Jungle Cat, Amur & Snow Leopards, Caracal, Lynx, Clouded Leopards, Fishing Cat. Large open photographer-friendly enclosures. UK's most popular photo workshop. Really special photo opportunities from just inches away. White Lion pride in a huge natural enclosure. Max 12 clients.

Big Cats at WHF, Smarden, Kent - Specialist event 6 photographers - incl. Jaguars £199

March 30, 31. April 20, 21st; Full day as above, but with additional space at each enclosure. Time is also put aside to review your photos at lunchtime. One to one tuition throughout this very special day. You will see all the animals as above and you will have more personal interaction with the cats. Now including Jaguar.

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Birds of Prey Workshop, Bedford £119

April 15th, 16th; Private flying displays on pre-determined flightpath helps you to focus on birds in flight. Excellent opportunities with carefully chosen backgrounds. Also static shots in outstanding natural locations. Jesses carefully hidden. This location boasts one of the largest collections of Birds of Prey in the UK. White tailed Sea Eagle, Bald Eagles, Hawks, Owls, Falcons, Kestrels, Buzzards and Long Eared Owl (new).

Foxes, Otters, Wildcats, Badgers & more, Surrey £159

July 11, 12th; Inside enclosures 'til sunset. Also Owls, Snakes, Badgers, Polecats, Weasels, Stoats, Hedgehog, Harvest Mice & various Deer. 2 sessions with the foxes, sometimes only inches away from you. Inside enclosures with Foxes, Otters, Scottish Wildcats. Badgers GUARANTEED. No fences or wires to shoot through.

Small Cats Workshop, Welwyn, Herts. £109

April 3rd; Privileged access to Snow Leopards, Amur Leopards, Pumas, Caracal, Leopard Cat, Lynx, Servals, Golden Cat, Jaguarundi, Cheetahs, Asian Wildcat. As featured on Animal Planet. Small groups.

Bass Rock Gannets £225

June 9th, June 18th, June 25th; Private boat. Exclusive use of island for just 10 photographers. 50,000 pairs of nesting gannets on one small island. 4.5 hours photography. Amazing close-ups & fantastic flight shots. Large crate of fish fed to gannets as they dive into the sea. An amazing sight that you will never forget.

Gannets diving off Bass Rock £99

June 14th; Fantastic new workshop for 2014. We sail round Bass Rock without landing on the island. A whole hour of throwing fish into the sea for the Gannets to catch. Amazing diving shots. 1,000 + dives. Tuition.

Farne Islands Puffins (Over 5 hrs photography) £89

June 10th, 17th, 24th; 20 species of birds. 50,000 puffins. Guillemots, Razorbills, Shag, Arctic Tern colony etc. You will get unbelievably close to some of the species. Get that much sought after shot of Puffins with their beaks crammed full of sand eels. Tips and Tuition. Approximately 5 hours photography.

Pro Birds of Prey Shoot (2) with Short Eared Owl, Northumberland. £139

June 8th, 13th, 16th; Both the falconer and the birds are different to workshop above. Venues are about 20 miles apart. We will take two of the birds down to an amazingly beautiful, little known waterfall. This will provide a unique backdrop for your subjects. The falls are surrounded by trees covered with mosses and lichens. We will photograph up to 10 different species of birds, mainly British. Maximum 8 photographers.

Small Mammals, Insects & Reptiles NEW WORKSHOP £199

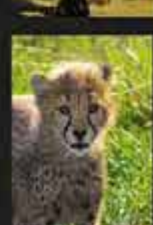
July 27th, 28th; Indoor studio set-ups ensuring professional quality photos of stunning subjects. Studio lighting set up for you. Triggers to fit your camera supplied. Cameras and lenses can be loaned without charge. Innovative set-ups to maximise your opportunities. Max 4 persons. Harvest Mice, Red Eyed Tree Frogs, Praying Mantis, Locust, Bearded Dragon, Scorpion, Tarantula, Snakes, Lizards etc.

Birds of Prey on Lindisfarne (Holy Island) incl. Short Eared Owl £139

June 5th, 6th; New workshop for 2016. Photograph a Short Eared Owl in its natural habitat before continuing with selection from Eagle Owl, Long Eared Owl, Barn Owl, Buzzard, Kestrel, Little Owl, Tawny Owl using boats, Lindisfarne Castle, boat houses & fishing props as backdrops.

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Fri 12th - Sun 14th May 2017
Fri 14th - Sun 16th July 2017
Fri 1st - Sun 3rd September 2017

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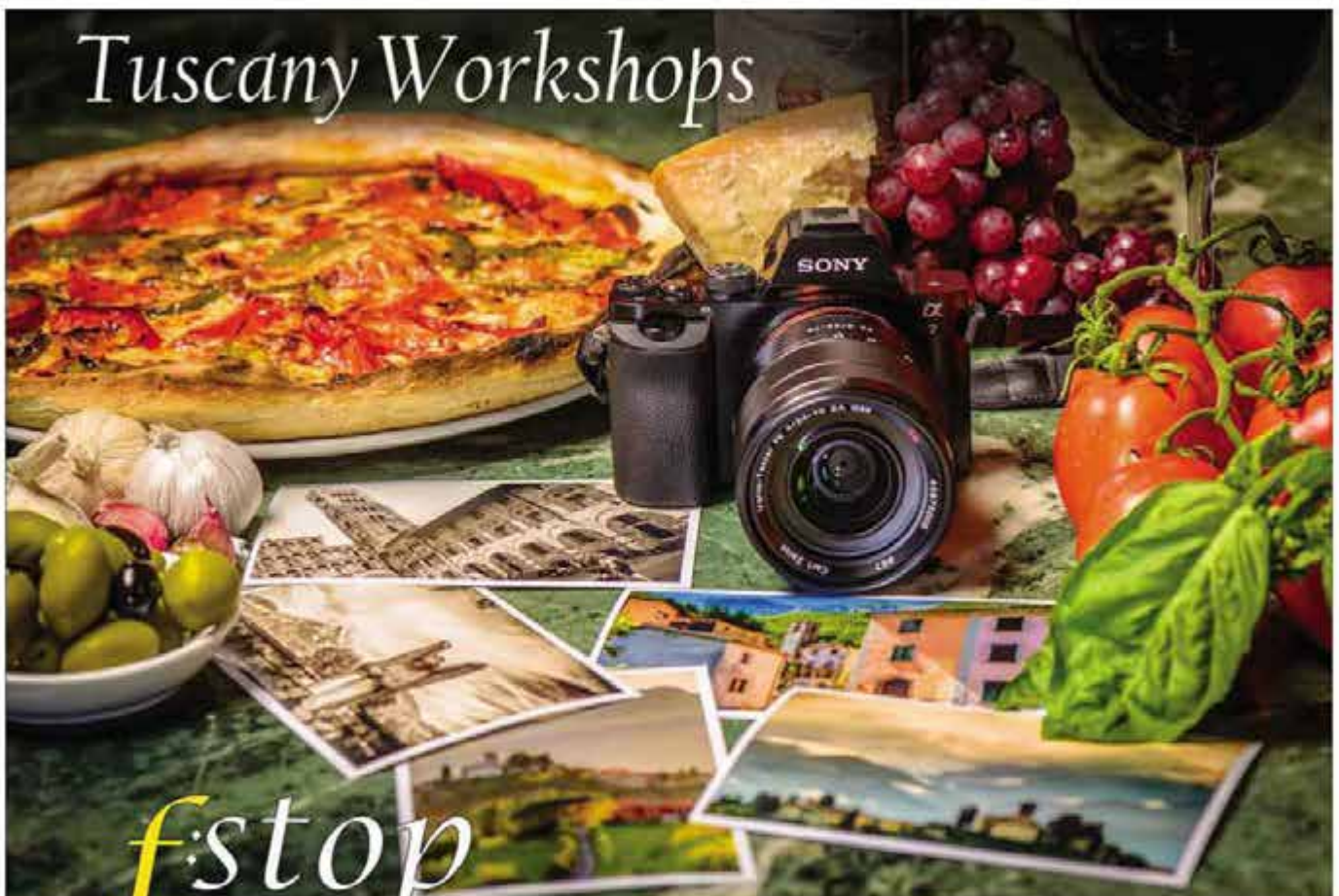
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This month's competition offers not one but two readers the chance to scoop a fantastic prize bundle of two recently released products, worth around £345. And all you need to do to have a chance of winning is answer one simple question.

So what could you win? The first item in our bundle is the Pro Light camera backpack 3N1-36, designed to offer a 3-in-1 storage solution. Not only can it be carried as a backpack, it can also be used as a sling bag or as a cross backpack. It's a very stylish bag with interchangeable dividers designed to hold a DSLR outfit, drone or pro video kit, as well as having a dedicated laptop compartment. It features a water-repellent fabric as well as a fold-out rain protector to

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To be in with a chance of winning one of our fantastic Manfrotto bundles, all you need to do is answer a simple question before the closing date of Tuesday 17 January 2017. Please note that this competition is only open to readers living in the UK.

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